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THE
LADIES' FLOWER-GARDEN.

Ornamental Greenhouse Plants.

THE

LADIES' FLOWER-GARDEN

OF

ORNAMENTAL GREENHOUSE PLANTS.

BY MRS. LOUDON.

SECOND EDITION.

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175 2. Calceolaria arachnoidea. The Cobweb Calceolaria.

176 3. Achimenes longiflora. The Long-flowered Achimenes.

177 4. Achimenes patens. The Spreading Achimenes.

178 5. Amphicome arguta. The Finely-cut Amphicome.

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179 1. Ruellia ciliatiflora. The Fringe-flowered Ruellia.

180 2. Cyclamen persicum. The Persian Cyclamen.

181 3. Primula sinensis. The Chinese Primrose.

182 4. Plumbago capensis. The Cape Leadwort.

183 5. Grevillea punicea. The Crimson Grevillea.

184 6. Gnidia oppositifolia. The Opposite-leaved Gnidia.

185 7. Pimelea incana. The Hoary Pimelea.

INTRODUCTION.

WHEN I began the series of works known as *The Ladies' Flower Garden,* I stated that I intended at some future period to devote one of the series to greenhouse and hothouse plants, and I propose to redeem my pledge in the present volume. As, however, my works are intended solely for amateurs, and as the more tender kinds of stove plants cannot be grown well without the aid of a regular gardener, I have confined myself in the following pages chiefly to greenhouse plants; and I have only mentioned such hothouse plants as may be set out in the open air during summer; or, at any rate, that may be placed in a greenhouse or room when in flower.

The plants I am now about to describe are, generally speaking, more beautiful than any included in my previous works, as they are natives of countries where the sun has most power, and where consequently colours are the brightest; but they also demand rather more care in the culture, especially when kept in pots. When exotic plants are grown in the free soil, as they generally are in a conservatory, the principal points to be attended to are to keep the house at a proper heat, and to give the necessary supplies of air and water. The heat of the house should be about 50°; and though it should never be allowed to fall below 45°, equal care should be taken to prevent it from mounting higher than 60°. Too much fire-heat, especially when there is not a strong degree of light from the sun, weakens the plants, and makes them become drawn up and blanched. It should never be forgotten in the culture of greenhouse plants, that they may be killed by too much heat, or too much damp, as well as by cold. Air should be given in the middle of every day, unless it is absolutely freezing; and air is necessary, as well as fire heat, to dry up the damp. Air should always be given by opening the upper sashes; and unless these are made to open, or there is a ventilator in the wall near the roof, the plants cannot be kept in health. Watering is another important part of culture, as plants under glass are deprived of the advantage of rain; and they should not only be regularly watered at the roots while in a growing state, but they should be frequently syringed over the leaves; as, unless the leaves are kept healthy, and their pores open, the functions of vegetable life cannot go on properly. At the same time, great care must be taken not to suffer any stagnant water to remain about the roots; as, if that were the case, they would soon decay.

A greenhouse requires still more care than a conservatory, as the plants are all in pots, and these pots are generally small. Plants in pots are in a most unnatural state, as their roots are not only confined to a very small space, but they are exposed to much greater alternations of heat and cold, moisture and dryness, than plants can be in the free soil. On this account, plants in a greenhouse require to be watered oftener than those in a conservatory. In the winter, plants in a growing state in a greenhouse should be watered twice a week, whereas in a conservatory once a week will be quite enough; and in the summer they should be watered every day, and in very hot weather twice a day; though in a conservatory every other morning will be generally found sufficient. It must be observed, however, that regular watering should only be given to plants in a growing state. A season of repose is as necessary to plants as sleep is to animals; but the rest of plants lasts longer, and is taken at intervals wider apart. When plants are in their native countries, they cease growing at certain times from the changes in the seasons, and other natural causes; but when plants are kept in a greenhouse, their season of rest must depend upon the gardener, who gives them repose by withholding water almost entirely. The best season for giving plants repose is just after they have ripened their seed, if they are permitted to bear seed; or just after they have flowered, and the flowers have fallen, if they do not produce seed. The necessity of giving plants repose was not understood formerly; and this is one principal reason why greenhouse plants, particularly geraniums, are so much finer now than they used to be.

Greenhouse plants are now also planted out much more commonly in the open air than they used to be, and for this purpose cuttings are made in autumn, and struck by plunging them into a hotbed; and the plants thus raised are kept during the winter in what is called a cold pit, and they are planted out in May or June. A cold pit is formed by making an excavation in the ground about two feet deep, and lining it with brick. On this is set a frame with glass lights, like that used for a hotbed, and the plants which are put in it are kept as dry as possible. Air is given every mild day between ten and three o'clock; and the glass lights are covered with mats every evening between four and five, when it appears at all likely to freeze.

In the present work, when the plants I describe require any particular kind of culture, I shall mention it under the head of "Description, &c.;" but when I say nothing of their culture, it must be understood that they require no other care than the general routine culture which I have above described. In the general arrangement of the work I shall follow the same plan as I have adopted in the previous volumes of this series.

THE
LADIES' FLOWER-GARDEN
OF
Ornamental Exotic Plants.

CHAPTER I.

RANUNCULACEÆ *Dec.*

Essential Character.—Sepals usually five, but sometimes varying from three to six. Petals frequently wanting, or confounded with the sepals; when present frequently unequal, or assuming unusual shapes. Stamens numerous, growing from beneath the pistil. Carpels numerous, growing close together on an elevated receptacle or torus. Fruit generally either a caryopsis or follicular. Leaves alternate or opposite, generally much laciniated, with the petiole dilated, so as to form a kind of sheath round the stem.

Description, &c.—There are very few exotic plants in this order, and, indeed, of those few still fewer are ornamental. A few kinds of Clematis and Anenome are all that can be properly called ornamental in the order; though the genus Knowltonia may be mentioned for its singularity.

GENUS I.

CLEMATIS *Lin.* THE CLEMATIS.

Lin. Syst. POLYANDRIA POLYGYNIA.

Generic Character.—Petals wanting. Calyx of from four to eight coloured petal-like sepals. Carpels caryopsides, and terminated by long tail, which is generally feathery. Leaves opposite, generally deeply cut. Roots fibrous.

Description, &c.—Some of the greenhouse species of this genus will live and flower in the open air, and this is the case with the two that I have figured. There is, however, a great difference between merely existing, and flowering in full beauty; and no one who has ever seen the splendour of the one, can rest satisfied with the other, unless compelled to do so. The genus Clematis is divided into two sections; the first of which comprises the most hardy species, and is distinguished by the tails of the carpels being long and feathery, like those of the Common Traveller's Joy; and the other, which contains the more beautiful and ornamental species, which are also more tender, is distinguished by the tails of the carpels being short and naked. The plants I am about to describe are all contained in the last section.

1.—CLEMATIS FLORIDA *Thunb.* THE MANY-FLOWERED CLEMATIS.

Synonyme.—Atragene indica *Desf.*

Varieties.—C. f. flore-pleno; C. f. Sieboldii, syn. C. bicolor.

Engravings.—Bot. Mag., t. 834; and Bot. Reg., t. 402. Of the variety, C. f. Sieboldii, Sweet's Brit. Flower-gard., 2nd series, t. 396; The Botanist, t. 241; and our *fig.* 2, in Pl. 1.

Specific Character.—Peduncle one-flowered, longer than the leaves. Leaves triternately parted; the segments cordate and unequally lobed; lobes ovate, acute, entire. Sepals five, rhombo-ovate, acute.

Description, &c.—Clematis florida is an old inhabitant of our gardens. It is a native of Japan, and it is said to have been introduced by Dr. Fothergill, in 1776; and, singular enough, it was the double variety that was first brought to England, the single-flowered plant being introduced about thirty years afterwards. The variety Sieboldii was introduced from Japan, by Dr. Siebold, about 1836, and it is remarkable for the beauty of its centre, which is of so dark a purple as to be almost black, and which, when grown under glass, is extremely beautiful. The plant thrives best in a mixture of peat and loam, and it is propagated by layers.

2.—CLEMATIS CÆRULEA *Lindl.* THE BLUE CLEMATIS.

Synonyme.—C. azurea grandiflora *Hort.*

Engravings.—Bot. Reg., t. 1955; Bot. Mag, t. 3983; The Botanist, t. 126; and our *fig.* 1, Pl. 1.

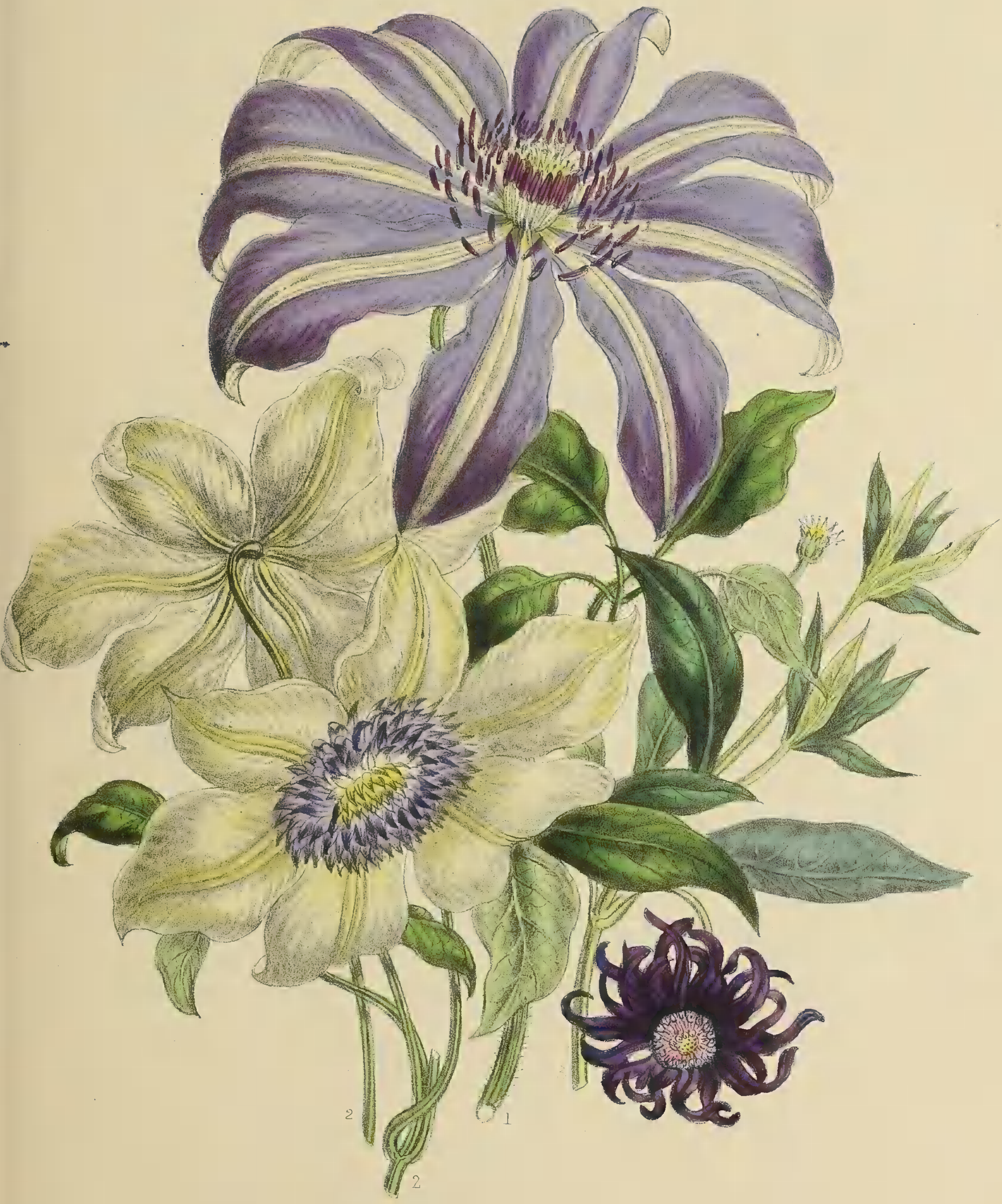
Specific Character.—Plant hairy. Leaves ternate; segments ovate, acute, entire. Peduncles one-flowered. Sepals six, oblong-lanceolate, acute, membranaceous, distinct from each other at the margin.

Description, &c.—This is another of the very beautiful plants introduced by Dr. Siebold, from Japan, in 1836; and it is certainly by far the most ornamental species of Clematis. It is very nearly hardy, and if the weather be tolerably mild, it will survive the winter in the open air; but its flowers are infinitely more beautiful when grown under glass. It is admirably adapted for planting in the free ground of a conservatory, in situations where it can be trained up a column or pillar conjointly with some evergreen plant; as in winter, when its leaves have fallen, it is far from ornamental, and, indeed, its stem has so much the appearance of a dead stick, that it is frequently cut away as such by inexperienced gardeners. It is a very free-growing plant, and under favourable circumstances it produces an abundance of flowers.

OTHER SPECIES OF CLEMATIS.

There are a few other species of half-hardy Clematis, but they are now very seldom seen in this country. The fact is, that nearly all the kinds of Clematis bear so much general resemblance to each other, that it seems scarcely worth while to grow any of them in plant-houses, where they would be probably mistaken for hardy plants of the same genus, which can be grown without either expense or trouble in the open air. The kinds I have mentioned, however, are, when well grown, so distinct, that they might be mistaken for plants of a different genus; and when trained under glass they are most exceedingly beautiful.

Pl. 1



1. Clematis cærulea. 2. Clematis Sieboldi
3. Illicium Floridanum

GENUS II.

ANEMONE *C. Bauh.* THE ANEMONE.

Lin. Syst. POLYANDRIA POLYGYNIA.

Generic Character.—Involucre of three leaves, more or less distant from the flower. Petals wanting in the single flowers. Calyx of from five to fifteen coloured, petal-like sepals. Caryopsides without feathery tails. Leaves deeply lobed. Roots tuberous.

Description, &c.—There are only a few greenhouse plants belonging to this genus, and of these, two are now comparatively seldom seen; while the other, which is extremely beautiful, has been only lately introduced. They are all half-hardy greenhouse plants, which, when in flower, may be brought into a room, or even placed in the open air in summer, without injury.

1.—ANEMONE CAPENSIS *Lin.* THE CAPE ANEMONE.

Synonymes.—Atragene capensis *Willd.*; Pulsatilla apiifolia *Herm.*
Engravings.—Bot. Mag., t. 716; and our *fig.* 2, in Pl. 2.
Specific Character.—Leaves biternate; leaflets wedge-shaped, trifid, the middle one elongated; segments generally three-toothed. Carpels very hairy.

Description, &c.—This beautiful plant is a native of the Cape of Good Hope, whence it was introduced in 1795. It was first supposed to belong to the genus Atragene, which is very nearly allied to the Clematis. It flowers in March, and requires the protection of a greenhouse. It is propagated by seeds only, and is easily killed by cold or damp. It varies very much in its flowers, which are sometimes very double, and sometimes scarcely so at all; and which are sometimes more or less tinged with pink, and sometimes pure whtie. Like all natives of the Cape of Good Hope, it requires to be kept in a warm, dry situation, without water, during its season of repose, and to have abundance of water while it is in a growing state.

2.—ANEMONE JAPONICA *Siebold.* THE JAPANESE ANEMONE.

Synonymes.—Atragene japonica *Thunb.*: Clematis polypetala *Dec.*
Engravings.—Bot. Reg. for 1845, t. 66; and our *fig.* 1, in Pl. 2.
Specific Character.—Radical leaves ternately divided; segments cordate, trilobed, unequal, doubly serrated.

Description, &c.—This is one of the most beautiful plants belonging to the genus, and it was introduced by Mr. Fortune in 1844, who met with it at Shanghae, the Japanese port of China. It has hitherto been kept in a greenhouse, where it flowers abundantly, its stems growing nearly two feet high, and the flowers varying considerably in shades of colour, so as to be extremely ornamental. As Siebold, in describing it, mentions that it grows at a considerable elevation on the mountains in the centre of Japan, it is probable that it may bear the open air in this country, at least during the summer months. Siebold also informs us that in its native country it is found in damp woods, near rivulets, and that it grows best in a moist, loamy soil. It is usually propagated, even in Japan, by offsets, as it rarely ripens any seeds.

3.—ANEMONE PALMATA *Lin.* THE YELLOW ANEMONE.

Synonymes.—A. latifolia *Ger.*; A. hortensis *Clus.*
Variety.—A. p. albida *Hook.*
Engravings.—Bot. Reg., t. 200; and our *fig.* 3, in Pl. 2. Of the variety, Bot. Mag., t. 2079.
Specific Character.—Root tuberous, oblong, vertical; root-leaves petiolated, rotundately cordate or reniform. Stem-leaves sessile, three-lobed; lobes trifid, spreading, ciliated.

Description, &c.—This very handsome plant is a native of the south of Portugal and the coast of Barbary, particularly in the neighbourhood of Algiers. It is half-hardy, only requiring to be protected during the winter and early spring; but it produces much larger flowers when kept under glass all the year, or at least till after April, which is its season for flowering. It was introduced in 1597. It is very ornamental, not only from its beautiful golden yellow flowers, but from its very singular leaves, which bear considerable resemblance to those of the Cyclamen; and hence the plant was formerly called the Cyclamen-leaved Anemone. The variety has cream-coloured flowers, faintly tinged on the inside with yellow; and the leaves, which are smaller than those of the species, are purple on the underside, like those of some kinds of Cineraria. The flowers are smaller than those of the species, and the plant is more tender, though it is brought from the same countries. Both the species and variety have sometimes double flowers.

GENUS III.

KNOWLTONIA *Salisb.* THE KNOWLTONIA.

Lin. Syst. POLYANDRIA POLYGYNIA.

Generic Character.—Calyx of five sepals. Petals five to fifteen, with a naked claw. Stamens numerous. Ovaries numerous, seated on a globose receptacle. Caryopsides numerous, one-seeded, baccate. Styles deciduous, awnless. (*G. Don.*)

Description, &c.—The plants included in this genus were formerly considered to belong to Adonis, but they were separated first by Mr. Salisbury, an English botanist, under the name of Knowltonia, in honour of a gardener named Knowlton, and afterwards by M. Ventenat, who gave the genus the name of Anamenia The species are all evergreen perennial plants, with biternate or triternate leaves, and umbels of greenish-yellow flowers. The only species that is at all ornamental is *K. vesicatoria.*

1.—KNOWLTONIA VESICATORIA *Sims.* THE BLISTERING KNOWLTONIA.

Synonymes.—Adonis vesicatoria *Lin.;* A. capensis *Lam.:* A. laserpitiifolia *Pers.;* Ranunculus perelegans *Lob.;* Astrantia africana *Mor.;* Imperatoria ranunculoides *Pluk.;* Anamenia laserpitiifolia *Vent.;* A. vesicatoria *Dum.*

Engravings.—Bot. Mag., t. 775; Bot. Reg., t. 936.

Specific Character.—Leaves biternate; segments subcordate, serrated, smooth. Umbels simple, few-flowered.

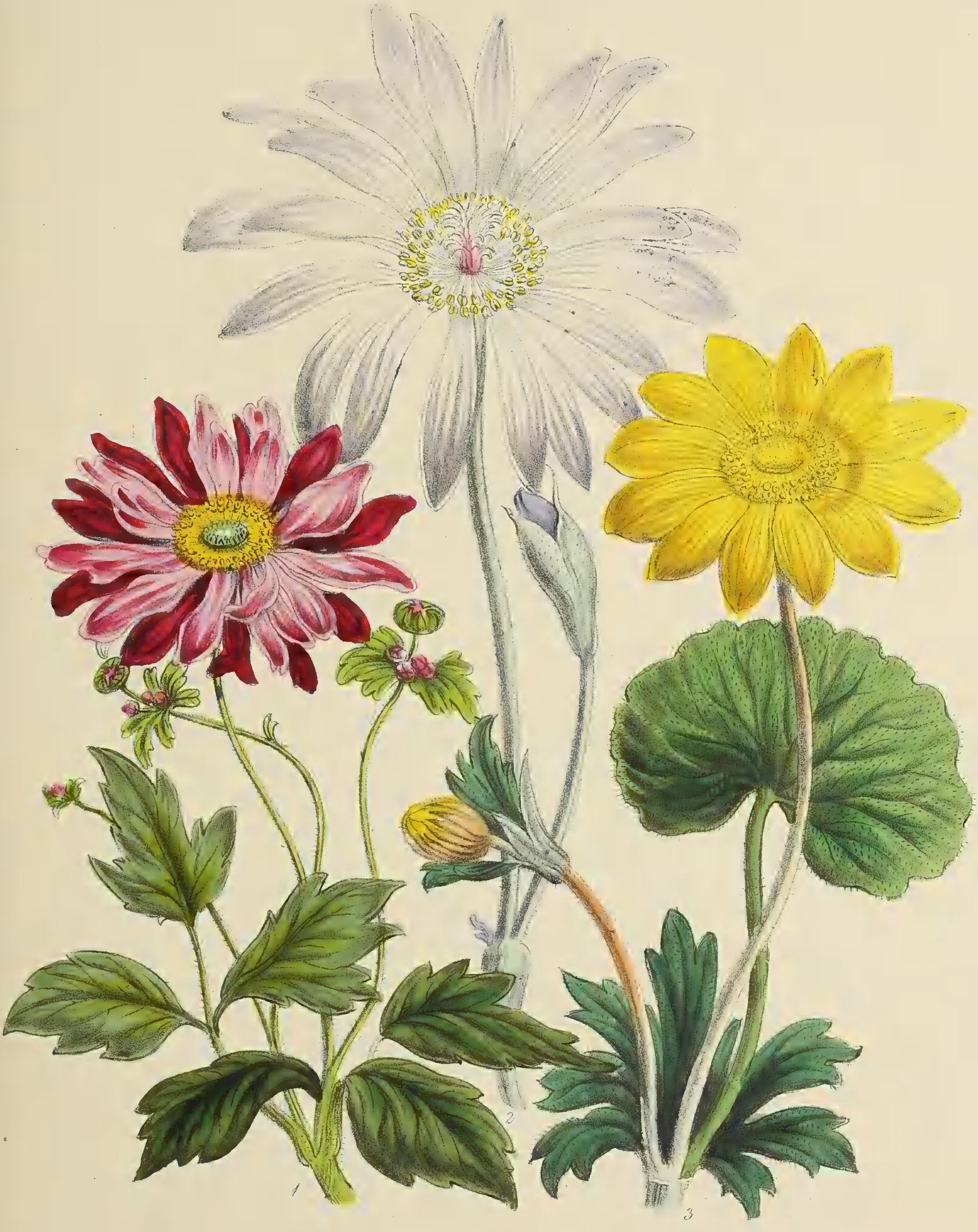
Description, &c.—This species is a greenhouse evergreen, possessing but little beauty, and flowering in winter. The acridity of the leaves is so great as to cause violent inflammation and swelling when applied to the skin. In the old books on gardening, *K. vesicatoria* is called the Cape Adonis. There are several other species of Knowltonia, and one of them (*K. rigida*) is figured in Loddiges' *Botanical Cabinet*, t. 850.

CHAPTER II.

DILLENIACEÆ *Dec.*

Essential Character.—Parts of flowers imbricate in the bud. Calyx of four or five permanent sepals. Petals four or five, permanent or deciduous, alternating with the sepals. Stamens indefinite, free, or polydelphous. Anthers adnate, bursting inwards or laterally. Carpels one-celled, numerous, usually from two to five, but sometimes solitary from abortion; capsular, baccate, or two-valved, free, or connected into one fruit. Seeds attached to the inner angles of the cells of the carpels, usually in two rows, numerous or few, sometimes solitary from abortion. Embryo small, placed in the base of a cartilaginous albumen.—Elegant evergreen trees, shrubs, or climbing shrubs, with alternate, simple, feather-nerved, entire, or toothed leaves. Flowers solitary, racemose or panicled, terminal or lateral, usually yellow, emulating those of *Cistus.* (*G. Don.*)

Description, &c.—All the plants belonging to this order are elegant evergreen trees or shrubs, many of them with climbing stems, and very ornamental flowers, which are generally yellow. They will none of them



1. Anemone Japonica 2. Anemone Capensis.
3 Anemone palmata.

live without the aid of artificial heat, and most of them require the warmth of a stove. I shall only describe a few of the hardiest of the genera.

GENUS I.

HIBBERTIA *Andr.* THE HIBBERTIA.

Lin. Syst. POLYANDRIA, MONOGYNIA TO POLYGYNIA.

Generic Character.—Sepals five, permanent. Petals five, deciduous. Stamens indefinite, filiform, inflexed. Carpels membranous, dehiscent, usually one to two-seeded. Seeds without any axil. (*G. Don.*)

Description, &c.—The plants belonging to this genus are erect, procumbent, or twining shrubs, with showy, bright yellow flowers. They all require the protection of a greenhouse, and they are natives of New Holland. The genus is named in honour of George Hibbert, Esq., a gentleman who was the means of introducing a great number of exotic plants into Great Britain. All the species vary exceedingly in the number of their styles and stamens.

1.—HIBBERTIA GROSSULARIÆFOLIA *Salisb.* THE GOOSEBERRY-LEAVED HIBBERTIA.

Synonyme.—H. crenata *Andr.*

Engravings.—Bot. Mag., t. 1218; Bot. Rep., t. 187.

Specific Character.—Leaves nearly orbicular, crenately toothed. Flowers on peduncles, opposite the leaves. Stems procumbent or climbing. (*G. Don.*)

Description, &c.—This is a very pretty trailing shrub, which produces a succession of bright yellow, solitary flowers throughout the summer. It may be planted out on rockwork in May or June, and continue in the open air till the latter end of September or the beginning of October, but it requires protection during winter. In situations where rockwork is introduced into a conservatory, it will continue producing flowers for nine or ten months in succession. It was introduced in 1803.

2.—HIBBERTIA VOLUBILIS *Andr.* THE TWINING HIBBERTIA.

Synonymes.—Dillenia speciosa *Curt.*; D. humilis *Donn*; D. turneræflora *Gawl.*; D. scandens *Willd.*; D. integra *Mœnch.*; D. volubilis *Vent.*

Specific Character.—Leaves obovate-lanceolate, nearly entire, mucronate; undersurface pubescent. Flowers sessile, with from four to eight styles. Stems twining. (*G. Don.*)

Engravings.—Bot. Rep., t. 126; Bot. Mag., under the name of *Dillenia speciosa*, t. 449.

Description, &c.—This very beautiful plant was figured in the "Botanical Magazine" as *Dillenia speciosa*, though this is a native of the East Indies, with white flowers, and can only live in a stove; whereas *Hibbertia volubilis* is a native of New Holland, growing wild in great abundance near Port Jackson, and being, in this country, what is called a hardy greenhouse shrub, that is, only requiring protection from frost during winter. The flowers, which are as large as those of the Gum Cistus, and of a brilliant yellow, are very ornamental, but they have an unpleasant smell. The leaves are of a bluish green, and covered with a whitish down, and the seeds are black, pea-shaped, and very hard.

3.—HIBBERTIA DENTATA *R. Br.* THE TOOTHED-LEAVED HIBBERTIA.

Engravings.—Bot. Reg., t. 282; Lodd. Bot. Cab., t. 347; Bot. Mag., t. 2338.

Specific Character.—Leaves oblong, acuminate, smooth, aristately serrated. Flowers pedunculate, with three styles. Stem twining.

Description, &c.—This is a very handsome plant, with bright yellow flowers and dark-green leaves. The stem and midrib of the leaves are red; and the leaves themselves have their projecting parts or teeth terminating in small bristles. They are also roughly furred on the under side, the hairs being crooked and all set one way, so as to occasion an unpleasant feeling when the hand is drawn against the grain. The species is a native of New Holland, from the Blue Mountains, whence it was introduced in 1814. It is rather more tender than the preceding kind, and it flowers in March.

OTHER SPECIES OF HIBBERTIA.

H. PEDUNCULATA, Bot. Reg., t. 1101; Syn. H. CORIFOLIA, Bot. Mag., t. 2672.

This is a very pretty little plant, with long slender stems, very small leaves, and abundance of small yellow flowers. It is a native of Port Jackson, whence it was introduced in 1821.

H. CUNNINGHAMII *Ait.*; Bot. Mag., t. 3183.

A twining shrub, with slender zigzag stems, clothed with smooth reddish bark. The leaves are two or three inches long, and narrow, somewhat clasping the stem at the base. The flowers are of a bright yellow, and very abundant, but they fall almost as soon as they expand. The plant is a native of St. George's Sound, and it is very nearly hardy, only requiring protection during winter.

There are seventeen other species of Hibbertia, all of which have been introduced, but which are very seldom seen in gardens. The flowers of all are very much alike, and the principal difference is in the leaves.

OTHER GENERA BELONGING TO THE ORDER DILLENIACEÆ.

CANDOLLEA *Labill.*

There is only one species in this genus, viz. *C. cuneiformis;* a much branching shrub, which grows, in its native country (St. George's Sound), eight or nine feet high. The leaves are wedge-shaped, and the flowers, which are small, are of a bright yellow; their greatest peculiarity lying in the calyx, which consists of five sepals, two of which are much longer than the others. This genus is named after the celebrated De Candolle. It was introduced in 1823.

PLEURANDRA *Labill.*

A genus of pretty little shrubs; all natives of New Holland, and all having yellow flowers. They are peculiar in their botanical construction from the number of their stamens varying from five to twenty, but all growing from one side of the flower. Eight species have been introduced, but they are seldom seen in British green-houses.

CHAPTER III.

MAGNOLIACEÆ *Dec.*

Essential Character.—Parts of flower imbricate in the bud. Calyx of three or six deciduous sepals. Petals three to twenty-seven, disposed in a ternary order, in one or many series. Stamens indefinite, free. Anthers adnate, elongated. Ovaries numerous, inserted in the torus above the stamens, usually disposed in spikes, rarely connected at maturity, one-celled, one or many-seeded, sometimes capsular, and opening either on the under or upper side, sometimes fleshy, indehiscent, sometimes samaræ-formed. Seeds adnate to the inner angle of the carpel. Embryo straight, small, inferior. Albumen fleshy. (*G. Don.*)

Description, &c.—All the plants belonging to this order are trees or shrubs, and they have generally ornamental flowers, and aromatic bark. The leaves are feather-nerved, and articulated or jointed at the base of the petiole. They are all natives of either Asia or America. The order is divided into two tribes, which some botanists consider distinct orders.

GENUS I.

ILLICIUM *Lin.* THE ILLICIUM.

Lin. Syst. POLYANDRIA POLYGYNIA.

Generic Character.—Calyx of from three to six petal-like sepals. Carpels stellately disposed, capsular, opening on the upper side, one-seeded. Seeds shining. Evergreen smooth shrubs, with oblong stalked coriaceous leaves. (*G. Don.*)

Description, &c.—There are three species in this genus, all of which have an agreeable aromatic smell, and very double flowers. The name of *Illicium* is said to be derived from *illicio,* to allure, in allusion to the very agreeable fragrance the plants give out.

1.—ILLICIUM FLORIDANUM *Ellis.* THE FLORIDA ANISEED TREE.

Engravings.—Bot. Mag., t. 439; Lodd. Bot Cab., t. 209; and our *fig.* 3, in Pl. 1.

Specific Character.—Petals twenty-seven to thirty, dark purple; outer ones oblong; inner ones lanceolate. (*G. Don.*)

Description, &c.—This plant is a native of West Florida, on the banks of the Mississippi, and it is very nearly hardy in British gardens. The leaves, when bruised, smell like Aniseed, and hence the popular English name of the plant. It was introduced in 1771. It was first kept in the stove, and thence removed to the greenhouse, and finally to the open air; but it is now found that the conservatory is its proper station, as its flowers are much finer and more aromatic under glass than in the open air. It can only be grown in pure heath-soil, and, when planted in the open air, it requires protection during winter. It is an evergreen shrub, growing to the height of six or eight feet.

2.—ILLICIUM ANISATUM *Lin.* THE CHINESE, OR YELLOW ANISEED TREE.

Specific Character.—Petals twenty-seven to thirty, yellowish; outer ones oblong; inner ones linear, subulate. (*G. Don.*)

Description, &c.—There is so little botanical difference between the two species, that Linnæus distinguished them merely by their colours. This kind is, however, much more fragrant than the last, though it is less ornamental. The capsules of the yellow Aniseed are imported from China, under the name of Chinese Anise, on account of the flavour they impart to certain dishes and liqueurs; and they are more especially used for this purpose in France, where they form the basis of the liqueur called *Anisette de Bordeaux.* In Japan, bundles of this tree are burnt in the temples before the idols, and on the tombs of their friends. The Chinese are said to chew it after dinner, as a stomachic and sweetener of the breath. The Chinese and Japanese watchmen also use the bark, finely powdered, to measure time; as they fill with it long, narrow tubes, which are graduated on the outside at regular distances. The powder is then lighted at the extremity of the tube, and, as it burns regularly and slowly, the watchman, when the flame has reached a certain point, rings the bell. This species is a large shrub or low tree. It was introduced into England in 1790. It will not live in the open air in England, but it grows well in a conservatory, where it will attain the height of ten feet; but, like the other species of the genus, it grows very slowly.

OTHER SPECIES OF ILLICIUM.

ILLICIUM PARVIFLORUM *Michx.* THE SMALL-FLOWERED ILLICIUM.

This species is much hardier than either of the other kinds. It is a native of Florida, where it forms a compact evergreen bush, from eight to ten feet high. It was introduced into England in 1790.

GENUS II.

MAGNOLIA *Lin.* THE MAGNOLIA.

Lyn. Syst. POLYANDRIA POLYGYNIA.

Generic Character.—Calyx of three deciduous sepals, that resemble petals. Corolla of from six to nine petals. Stamens numerous. Pistils numerous. Carpels disposed compactly in spikes, opening by the external angle, one or two-seeded, permanent. Seeds baccate, somewhat cordate, pendulous, hanging out beyond the carpels by a very long umbilical thread. (*G. Don.*)

Description, &c.—The Magnolias, as is well known, are all beautiful trees with very ornamental flowers; but all the North American kinds are quite hardy. The Asiatic species, on the contrary, are all more or less tender; and though the greater part of them will live in the open air in the neighbourhood of London, yet their flowers are more abundant and more ornamental in a warmer climate. *Magnolia conspicua* is generally grown in the open air in this country, and it flowers profusely; but the beauty of its flowers is very apt to be destroyed by the spring frosts, and it is seldom seen to advantage, unless it is trained against a wall where it can be protected if necessary. *Magnolia purpurea* is quite hardy; but the flowers will not expand unless the weather is warm. *M. gracilis* is nearly allied to *M. purpurea*, and both will not flower well in the open air in exposed situations. They are, however, rarely grown in conservatories, on account of the space they take.

1.—MAGNOLIA FUSCATA *Andr.* THE BROWN-STALKED MAGNOLIA.

Synonymes.—M. anonæfolia *Salisb.*; M. versicolor *Don.*
Engravings.—Bot. Rep., t. 229; Bot. Mag., t. 1008.
Specific Character.—Flowers six-petaled, erect; the calyx and the neighbouring part of the stem clothed with a brown glandular pubescence.

Description, &c.—It is a native of China, whence it was introduced about the year 1800. When first introduced it was kept in a stove, and found to be evergreen, but as it did not flower well, it was removed to a greenhouse, where its leaves dropped in autumn, and it flowered freely the following June, producing a succession of blossoms till September. The flowers are of a reddish brown, the petals being very thick and fleshy, and they have a very peculiar kind of fragrance, which is generally considered more agreeable than the odour of *Magnolia grandiflora*, which is unpleasant to many persons from its excessive sweetness. *M. fuscata* is a shrub of low growth, seldom attaining a height of more than two feet. It is propagated by cuttings.

2.—MAGNOLIA PUMILA, *Andr.* THE DWARF MAGNOLIA.

Synonyme.—Talauma pumila *Dec.*
Engravings.—Bot. Rep., t. 226; Bot. Mag., t. 977.
Specific Character.—Flowers globose, six-petaled. Stems smooth. Leaves elliptic, acuminate, undulated.

Description, &c.—This very beautiful plant most nearly resembles *Magnolia glauca*, both in the shape of its flowers and in their fragrance; though in this plant the fragrance is so much more powerful than in any other species of the genus, that a small flower will perfume a large apartment. Like the last species, this plant is an evergreen in the stove, and deciduous in the greenhouse It was introduced from China in 1786.

CHAPTER IV.

CISTINEÆ *Dec.*

Essential Character.—Calyx of five permanent sepals, which are continuous with the pedicel; they are usually unequal: the two exterior ones are usually much smaller than the others, and even sometimes almost wanting; the three inner ones are twisted when in the bud. Petals five, caducous, equal, twisted before expansion, but in a contrary direction to the sepals. Stamens usually indefinite, hypogynous, erect, free; anthers ovate, two-celled, and two-chinked, inserted by the base. Ovary free. Style one, filiform, crowned by a simple stigma. Capsule constantly of from three to five, but rarely of ten, valves, sometimes bearing in the middle of each valve a longitudinal, placentarious nerve, and hence the capsule is one-celled; sometimes these middle lobes jut out more or less into dissepiments, therefore, in this case, the capsule is, completely or incompletely, many-celled. The seeds are, therefore, either truly parietal, but sometimes contiguous to the parietal placenta, or fixed to the inner angle of the dissepiment, when there is any; they are very numerous and small. Albumen mealy. Embryo spiral, or curved within the albumen. (*G. Don.*)

Description, &c.—There are four genera belonging to this order, two of which (*Cistus* and *Helianthemum*) differ very slightly from each other. Their general appearance, indeed, is the same; but the botanical difference consists in the capsule, which is one-celled in the *Helianthemum*, and ten or five-celled in the *Cistus*. The two other genera are called *Hudsonia* and *Lechea;* the first consists of pretty little greenhouse shrubs, which look like Heaths when not in flower; and the second of North American hardy herbaceous plants, with inconspicuous flowers.

GENUS I.

CISTUS *Tourn.* THE CISTUS, OR ROCK-ROSE.

Lin. Syst. POLYANDRIA MONOGYNIA.

Generic Character.—Calyx of five sepals; sepals disposed in a double series, the two outer ones unequal, sometimes wanting. Petals five, equal, somewhat cuneated, caducous. Stamens numerous, usually exserted from the glandular disk. Style filiform. Stigma capitate. Capsule covered by the calyx, five or ten-valved, with a seminiferous partition in the middle of each valve, therefore five or ten-celled. Seeds ovate, angular. Embryo filiform, spiral. (*G. Don.*)

Description, &c.—All the species belonging to this genus are elegant shrubs, generally of low growth, with large handsome flowers, the petals of which are either white or some shade of red or purple. They are mostly greenhouse shrubs, which will bear planting out in the open air during summer. The name of Cistus is derived from a Greek word signifying a box, in allusion to the remarkable shape of the capsules. The flowers of all the plants belonging to this genus fall a few hours after they have expanded.

1.—CISTUS PURPUREUS *Lam.* THE PURPLE CISTUS.

Engravings.—Bot. Reg., t. 408; Sweet's Cist., t. 17; and our *fig.* 1, in Pl. 3.

Specific Character.—Leaves oblong-lanceolate, tapering at both ends, slightly wrinkled and undulated at the edge; foot-stalks very short, hairy, and stem-clasping. Flowers terminal, sometimes solitary, and sometimes two or three together.

Description, &c.—This very beautiful plant is supposed to be a native of the Levant, but it has been so long in our gardens that it is difficult to say where it came from, or when it was introduced. We only know that it cannot be a native of this country, as it will not live in the open air during winter without protection. The petals of this species are marked with a dark spot at the base, and they are imbricate, that is, they touch and lie slightly over each other when the flower is expanded. The shrub grows from two to four feet high, and it is well suited for a conservatory, as its flowers are most beautiful under glass, though it will stand perfectly well in the open air during summer.

2.—CISTUS INCANUS *Lin.* THE HOARY-LEAVED ROSE CISTUS.

Engravings.—Bot. Mag., t. 43; Flora Græca, t. 494; and our *fig.* 5, in Pl. 3.

Specific Character.—Leaves spathulate, tomentose, wrinkled, somewhat three-nerved, sessile, somewhat connate at the base; upper leaves narrower.

Description, &c.—This species is very remarkable, from the whiteness of its leaves and the crumpled appearance of its flowers. The petals are imbricate, but not so decidedly so as in the last species. Though this plant is a native of Spain and the South of France, it is more tender than *C. purpureus*, which is a native of the East. Under glass, however, it flowers freely, and ripens abundance of seeds.

3.—CISTUS VAGINATUS *Ait.* THE SHEATHED-LEAVED CISTUS.

Synonyme.—C. symphitifolius *Lam.*

Engravings.—Bot. Reg., t. 225; and our *fig.* 2, in Pl. 3.

Specific Character.—Leaves lanceolate, acute, three-nerved, hairy, the under surface reticulated; footstalks furrowed, dilated, sheathing, and joined together at the base. Peduncles one to three-flowered, axillary and terminal, furnished with large spreading bracteæ at the base.

Description, &c.—This very handsome plant differs considerably from the other species which I have described, particularly in the footstalks of its leaves, which are curiously dilated and joined together so as to form a ribbed sheath, half-an-inch or more in length, to the stem.

OTHER SPECIES OF CISTUS.

There are numerous other species of Cistus mentioned in books, but they are seldom seen in British gardens, with the exception of those kinds which are hardy enough to stand out in the open air, such as the Gum Cistus, and several nearly allied species. Of those kept in greenhouses, the names are very frequently confused together, some slight variations of *C. purpureus* and *C. incanus* being known by several other names. The following, however, are quite distinct:—

C. CRETICUS *Lin.*

This species has very handsome flowers, the petals of which are purple, with yellow at the base, and imbricate. The flowers are generally solitary, and the leaves somewhat downy.

C. ROTUNDIFOLIUS *Swt.*

This species has roundish leaves and purple flowers, with a yellow mark at the base of each petal. It is a native of the South of Europe, and it is nearly hardy. It is only about a foot high.

C. CANDIDISSIMUS *Lin.*

This species is a native of the Grand Canary Islands, where it is found in pine forests at a considerable distance above the level of the sea. The leaves are quite white, with a downy wool; and the flowers are of a pale rose-colour, with the petals quite distinct.

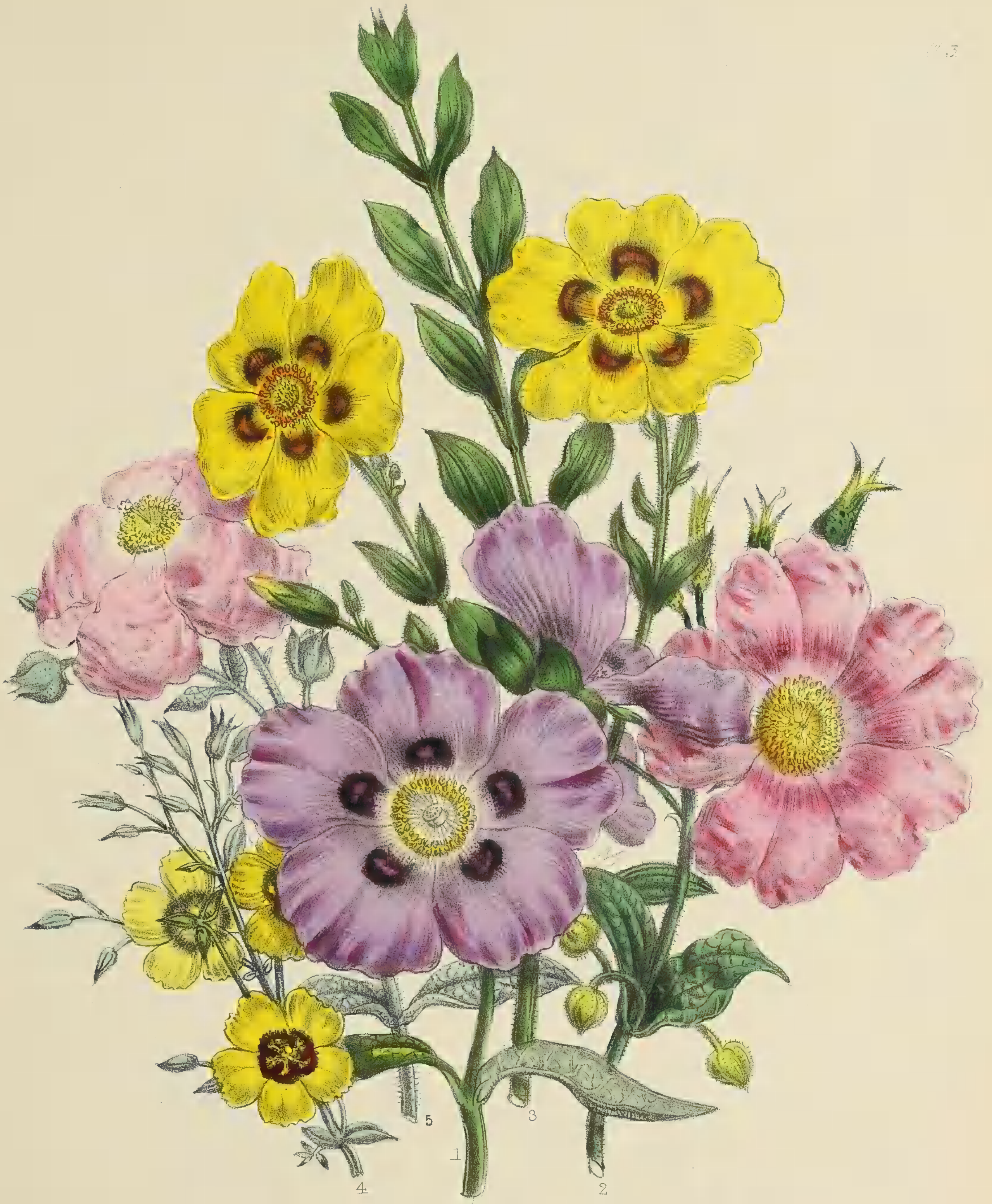
GENUS II.

HELIANTHEMUM *Tourn.* THE HELIANTHEMUM, OR SUN-ROSE.

Lin. Syst. POLYANDRIA MONOGYNIA.

Generic Character.—Calyx of three equal sepals, but when five, they are disposed in a double series; the two outer sepals are usually smaller than the inner ones, very rarely larger. Petals five, usually regularly denticulated at the top. Stigma capitate. Style sometimes almost wanting, sometimes straight, sometimes oblique, and sometimes bent at the base. Ovary triquetrous. Capsule three-valved; valves with a narrow dissepiment, or a seminiferous nerve in the middle of each. Seeds angular, smooth. Albumen mealy. (*G. Don.*)

Description, &c.—The greater part of the species are trailing plants, some of which are herbaceous, and some shrubby. The flowers are generally smaller than those of the Cistus, and more abundant, being produced



1 *Cistus purpureus.* 2 *Cistus vaginatus.* 3 *Cistus formosus.*
4 *Cistus Algarvensis.* 5. *Cistus incanus.*

almost in clusters. The flowers of most of the species are yellow, but some are white and some pink. The plants are generally of a much smaller size than those belonging to the genus Cistus, and their stems are usually trailing instead of being erect. The name of Helianthemum is from two Greek words signifying flower of the sun, because the petals of most of the species unfold when the sun rises, and drop before it sets in the evening.

1.—HELIANTHEMUM FORMOSUM *Dun.* THE BEAUTIFUL HELIANTHEMUM, OR SUN-ROSE.

Synonyme.—Cistus formosus *Sims.*

Engravings.—Bot. Mag., t. 264; and our *fig.* 3, in Pl. 3, under the name of Cistus formosus.

Specific Character.—Erect. Branches tomentosely villous, canescent. Leaves on short footstalks, obovate, lanceolate, tomentosely villous, younger ones hoary. Peduncles and calyx villous. Calyx of three sepals.

Description, &c.—This very beautiful plant is a native of Portugal, whence its seeds were introduced in 1780. It is very nearly hardy, and it may be grown in the open border all the year if it can be protected from the spring frosts; but it flowers much better under cover, and particularly when it is grown in a pot, which may be done, even when the plant is three or four feet high, without its sustaining any injury.

2.—HELIANTHEMUM ALGARVENSE *Dun.* THE ALGARVE HELIANTHEMUM.

Synonyme.—Cistus Algarvensis *Sims.*

Engravings.—Bot. Mag., t. 627; Sweet's Cist., t. 40; and our *fig.* 4, in Pl. 3, under the name of Cistus Algarvensis.

Specific Character. — Stem branched. Leaves sessile, ovate-lanceolate, obtuse, hoary on the under surface; upper surface green, pilose. Peduncles somewhat panicled, pilose. Calyx of three sepals, acute, hairy. (*G. Don.*)

Description, &c.—This very pretty little plant is a native of Algarve, a province in the south-west of Portugal. The flowers are small, but very pretty, and they are produced in great abundance. The stem of the plant is trailing, and only the flower-stems raise themselves erect. The flowers appear in July and August, but they rarely ripen seed; therefore, the plant is generally propagated by cuttings. It is tolerably hardy, and may be grown on rockwork in the open air during summer.

OTHER SPECIES OF HELIANTHEMUM.

These are very numerous, but very few of them are found in British gardens, and very often the same plant is known under several different names. *H. umbellatum*, with white flowers, and the flowers in a kind of umbel, and *H. candidum*, with yellow flowers, and leaves covered with a white down, are perhaps among the most common.

Almost all the kinds of Helianthemum ripen their seeds, and consequently new plants may be raised from them; or cuttings of the ripe wood may be taken off in August and September, when they will strike readily. Nearly all the greenhouse species only require protection in the winter, and may be planted on rockwork during the summer months.

GENUS III.

HUDSONIA *Lin.* THE HUDSONIA.

Lin. Syst. POLYANDRIA MONOGYNIA.

Generic Character.—Petals five. Stamens from fifteen to thirty; filaments filiform; anthers small, longitudinally dehiscent. Style straight, simple, equalling the stamens in length. Stigma simple. Capsule one-celled, three-valved, one to three-seeded, oblong or obovate, coriaceous, smooth or pubescent. Seeds granulated. Embryo immersed in a horny albumen. (*G. Don.*)

Description, &c.—There are only five species belonging to this genus, two of which have been introduced. They are pretty little Heath-like plants with yellow flowers, natives of New Jersey and Virginia in North America;

and they were introduced early in the present century. They are, however, greenhouse plants, which require to be kept in the house all the year, being more tender than many of the species of Helianthemum. It is on this account, probably, that they are comparatively rare in England, as they are scarcely worth the trouble that must be taken to grow them. *H. ericoides* is the only species now found in British greenhouses, and even that is very rarely to be met with.

CHAPTER V.

POLYGALEÆ *Juss.*

Essential Character.—Calyx of five sepals, which are imbricate in æstivation, the two inner ones usually petal-formed, the three outer ones smaller; of these last two are connected. Petals three to five, hypogynous, more or less connected with the staminiferous tube, which is usually cleft in front, rarely distinct. Filaments united with the petals, monadelphous; these are divided at the top into two equal bundles, containing four anthers each. Anthers eight, one-celled, inserted by the base, opening by a pore at the top. Ovary one, free, two-celled, rarely one, three-celled. Style one, incurved. Stigma funnel-shaped, or two-lobed. Pericarp capsular, or drupaceous, two-celled, or only one-celled from abortion; valves bearing a dissepiment in the middle. Seeds solitary in the cells, pendulous, usually with an arillate caruncle at the base, sometimes pilose, or with a tuft of hairs. Embryo straight, flat. Albumen thin, but rarely wanting, with the endopleura sometimes tumid. (*G. Don.*)

Description, &c.—The plants belonging to this order are either herbaceous or suffruticose, and they frequently abound in a milky juice, more especially in the roots. The leaves are entire, and articulated about the stem. The flowers are disposed in racemes, and very closely resemble those of the leguminous plants. Polygala is the only genus which is common in British gardens.

GENUS I.

POLYGALA *Tourn.* THE MILKWORT.

Lin. Syst. MONADELPHIA OCTANDRIA.

Generic Character.—Sepals five, permanent; the two inner ones wing-formed, the three outer ones small. Petals three to five, united with the tube of the stamens; lower petal keel-formed (perhaps from two petals being constantly joined). Stamens eight, with the filaments connate into a tube at the base, which is cleft in front. Anthers opening by a pore at the apex. Capsule compressed, elliptical, obovate or obcordate. Seeds pubescent, caruncculate at the hilum, with the caruncle rarely inappendiculate. (*G. Don.*)

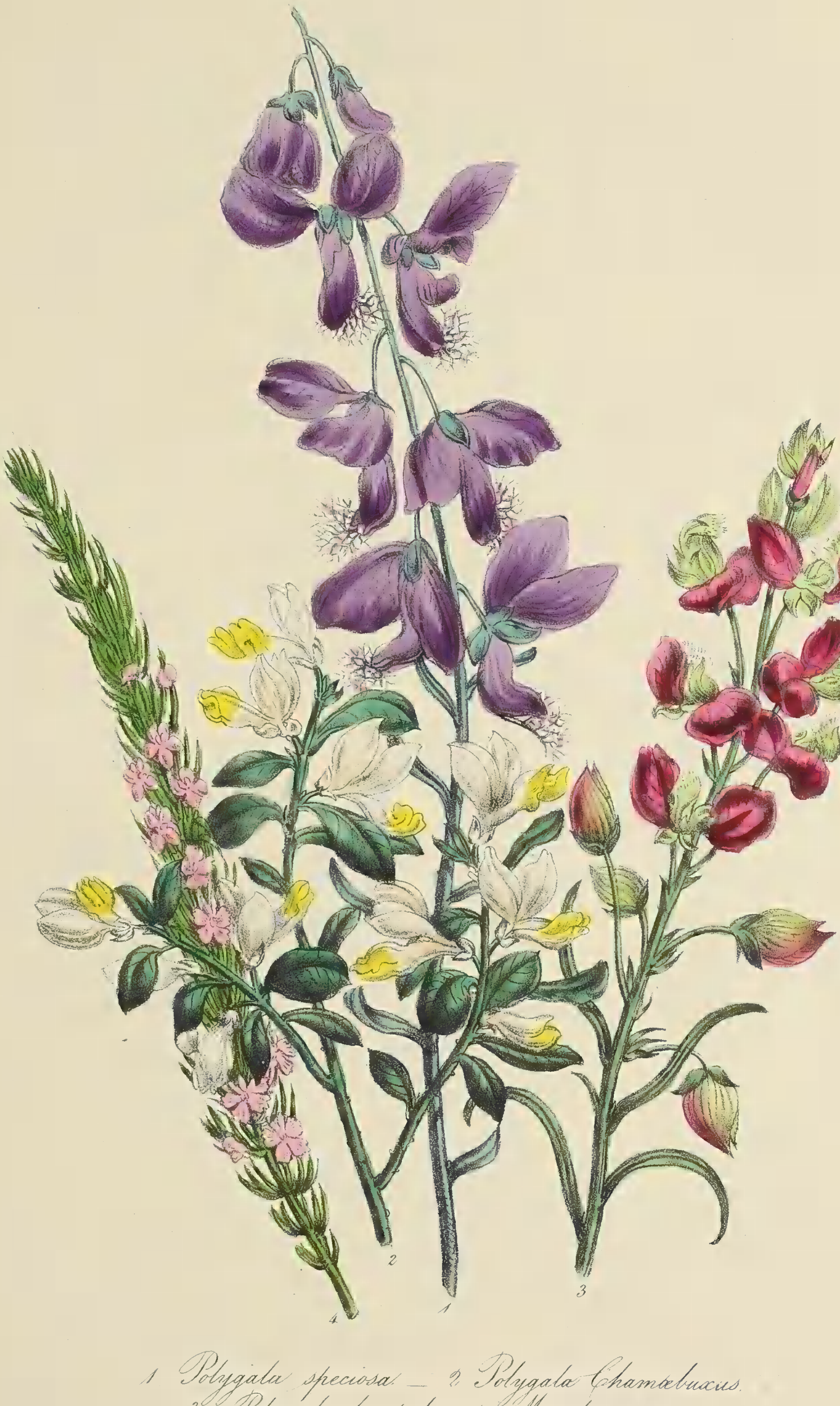
Description, &c.—The plants belonging to this genus are mostly greenhouse shrubs, with very ornamental flowers. The name of Polygala is from two Greek words signifying much milk, in allusion to the plant being supposed to produce a great deal of milk in the cows that feed on it. The species are natives of different countries, and they are very numerous.

1.—POLYGALA OPPOSITIFOLIA *Lin.* THE OPPOSITE-LEAVED POLYGALA.

Engravings.—Bot. Mag., t. 492; Bot. Reg., t. 636.

Specific Character.—Leaves opposite, cordate, ovate, acute. Flowers crested.

Description, &c.—This is one of the handsomest species of the genus, and one of the most common in collections. The flowers are purple, with a pale crest and keel; and the plant is a native of the Cape of Good Hope, whence it was introduced in 1790. There are several other reputed species, which are probably only varieties of this, such as *P. cordifolia* Thunb., *P. latifolia* Ker, and *P. oppositifolia major* Lindl.; all of which



1 *Polygala speciosa.* — 2 *Polygala Chamæbuxus.*
3 *Polygala bracteolata.* 4 *Muraltia mixta.*

are very ornamental plants, and, being all natives of the Cape of Good Hope, they all require a greenhouse in this country. They should all be grown in peat earth mixed with sand, and they are easily increased by cuttings.

2.—POLYGALA BRACTEOLATA *Lin.* THE LARGE-BRACTED MILKWORT.

Engravings.—Bot. Mag., t. 345; and our *fig.* 3, in Pl. 4.

Specific Character.—Flowers crested, racemose. Bracts three-leaved. Leaves linear-lanceolate. Stem shrubby.

Description, &c.—This plant is very different from the Polygalas usually seen in greenhouses, from its spear-like leaves, and dark crimson flowers. It is a native of the Cape of Good Hope, whence it was introduced in 1713, but it is now very rarely to be met with.

3.—POLYGALA LIGULARIS *Ker.* THE TONGUE-LEAVED MILKWORT.

Engraving.—Bot. Reg., t. 637.

Specific Character.—Leaves ligulate-linear, rather obtuse, crowded, spreading, glabrous. Branches villous. Bracteas permanent, equal. Racemes short, crowded.

Description, &c.—This is a very curious species: the branches, with their thick leaves crowded together, bear some resemblance to those of the Rosemary; while the flowers, which are like those of the other Polygalas, are crowded together in clusters at the extremity of the branches. The species is a native of the Cape of Good Hope, whence it was introduced in 1820.

4.—POLYGALA SPECIOSA *Sims.* THE SHOWY POLYGALA.

Engravings.—Bot. Mag., t. 1780; Bot. Reg., t. 150; and our *fig.* 1, in Pl. 4.

Specific Character.—Flowers crested, in long racemes, alternate, and rather distant. Leaves alternate, oblong-cuneate, glabrous.

Description, &c.—This, though it is called the showy Polygala, is one of the least ornamental species of the genus. It is a native of the Cape of Good Hope, whence it was introduced in 1814; and, when grown in a conservatory, it forms a loose spreading shrub, upwards of six feet high.

5.—POLYGALA MYRTIFOLIA *Lin.* THE MYRTLE-LEAVED POLYGALA.

Engraving.—Bot. Reg., t. 669.

Specific Character.—Leaves obovate or oblong, somewhat mucronated; branchlets clothed with appressed down; bracteas equal, permanent; pedicels shorter than the flowers. (*G. Don.*)

Description, &c.—This very beautiful species is a native of the Cape of Good Hope, and was one of the first plants introduced from that country. It was cultivated here by the Duchess of Beaufort, a great patroness of greenhouse plants in the early part of the last century. The date of its introduction is 1707. The plant itself forms a slender, branched shrub, growing three or four feet high, and of very easy cultivation. There are a great many varieties, among which, perhaps, may be reckoned *P. grandiflora* Lodd., which has very large bluish-purple flowers.

6.—POLYGALA CHAMÆBUXUS *Lin.* THE BOX-LEAVED MILKWORT.

Engravings.—Bot. Mag., t. 316; and our *fig.* 2, in Pl. 4.

Specific Character.—Stem suffruticose, branched, procumbent. Leaves oblong-lanceolate, mucronated. Racemes one to two-flowered; keel of the flower crested. (*G. Don.*)

Description, &c.—This beautiful little plant is a native of mountainous places in woods, in various parts of Europe, particularly in Switzerland. As, however, in its native country, it is covered with snow during winter, it is, like many other Alpine plants, seriously injured by cold without snow; and hence it is very apt to have its foliage injured, and the beauty of its flowers greatly impaired, by the cold of British winters. It has, therefore, been recommended to keep it, during a portion of the winter and early spring, under glass, and only to place it in the open ground to flower. When it is planted out, however, it should be placed in an open situation, fully exposed to the sun and air.

OTHER KINDS OF POLYGALA.

These are very numerous, but they are seldom seen in British gardens.

GENUS II.

MURALTIA *Neck.* THE MURALTIA.

Lin. Syst. MONADELPHIA HEXANDRIA.

Generic Character.—Calyx glumaceous, of five sepals. Sepals almost equal. Petals three, connected, middle one bifid, with obtuse lobes. Ovary crowned with four horns or tubercles. Capsules two-valved, two-celled, crowned with four horns or four tubercles. (*G. Don.*)

Description, &c.—The species belonging to this genus are all shrubs, with a rigid spiny habit of growth, and small red or purple flowers. They are all natives of the Cape of Good Hope, and, of course, require a greenhouse in this country.

1.—MURALTIA HEISTERIA *Dec.* THE FURZE-LEAVED MURALTIA.

Synonymes.—Polygala Heisteria *Lin.*; Spartium africanum *Comm.*; Thymbra capensis *Pluk.*; Heisteria pungens *Berg.*

Engraving.—Bot. Mag., t. 340.

Specific Character.—Leaves triquetrous, stiff and spiny at the apex, produced in bundles. Flowers axillary, sessile.

Description, &c.—This very singular plant, when grown in a conservatory, becomes a shrub of considerable size, so closely resembling a Furze bush when not in flower, as to be occasionally mistaken for one, and to excite surprise that a plant so hardy as the common Furze, should be kept under glass. When the plant is in flower, however, the resemblance is less striking, as the flowers are of a brilliant purple. It is a native of the Cape of Good Hope, whence it was introduced in 1787; but it is not so common as it deserves to be, on account of the difficulty of propagating it, as it does not grow readily from cuttings.

2.—MURALTIA MIXTA *Lin. fil.* THE HEATH-LEAVED MURALTIA.

Synonyme.—Polygala mixta *Lin.*

Engravings.—Bot. Mag., t. 1714; Bot. Rep., t. 455; and our *fig.* 4, in Pl. 4.

Specific Character.—Leaves linear, awl-shaped, mucronulate, straight, in crowded bundles, glabrous. Flowers axillary, sessile; horns shorter than the capsule. (*G. Don.*)

Description, &c.—This is a very singular looking plant, closely resembling a Heath, with pretty pink flowers intermixed with green leaves. The stem is shrubby, but the branches are long and flexible, like those of several kinds of Heath. The plant is a native of the Cape of Good Hope, whence it was introduced in 1789. When kept constantly in the greenhouse, it continues in blossom nearly all the year.

OTHER SPECIES OF MURALTIA.

M. STIPULACEA *Burch.*—Bot. Mag., t. 1715.

This is a slender growing plant, nearly allied to *M. Heisteria*, but with smaller flowers, which are of a dark purple as in that plant.

M. ALOPECUROIDES *Dec.*; Bot. Mag., t. 1006.

This is a very pretty little plant, with soft spreading leaves, which are covered with a downy pubescence, and bright crimson flowers. It was a great favourite in greenhouses towards the close of the last, and about the beginning of the present century; but it is now rarely to be met with. Its popular English name was the Fox-tail Milkwort.

M. HUMILIS *Dec.*; Lodd. Bot. Cab., t. 420.

A pretty little plant, not growing more than five or six inches from the ground, but having many branches. The flowers, which are rather large in proportion to the size of the plant, are of a pale pink, with a golden yellow crest. Like the others, it is a native of the Cape of Good Hope, whence it was introduced in 1817.

OTHER PLANTS BELONGING TO THE ORDER POLYGALEÆ.

MONNINA OBTUSIFOLIA *Kunth.*; Bot. Mag , t. 3122.

A pretty little plant, with purple pea flowers, which, when magnified, will be found very curiously formed in a botanical point of view. The species is a native of South America, and it was introduced in 1831.

MUNDIA SPINOSA *Kunth.*

A pretty little plant, closely resembling the Furze in its general appearance, but with pink and white flowers.

COMESPERMA GRACILIS *Paxt.*; Mag. of Bot., Vol. V. t. 145.

A pretty little plant, with purple flowers and very slender stems. It is a native of Australia, whence it was introduced in 1834. It is of very slow growth; but if supplied with heat and moisture it produces an immense number of flowers

There are several other species of Comesperma, most of which are natives of New Holland, and have purple flowers.

CHAPTER VI.

LINACEÆ *Dec.*

Essential Character.—Calyx of three to four, but usually of five sepals, hardly connected at the base, continuous with the peduncle, permanent, imbricate in æstivation. Petals equal in number to the sepals, and alternating with them, hypogynous, unguiculate at the base, connected with the ring of the stamens, as well as sometimes being connected together at the base, twisted in æstivation. Stamens equal in number with the petals, slightly monadelphous at the base, alternating with the petals, with a tooth or abortive filament between each: anthers ovate, inserted by the base, two-celled, birimose. Ovary subglobose, with as many cells as there are sepals, rarely fewer. Styles equal in number to the cells of the ovary, capitate or simple at the apex. Capsule globose, usually acuminate, crowned by the permanent bases of the styles, constantly composed of carpels having induplicate margins, each opening by two valves at the apex, with an incomplete dissepiment rising from the centre of each, therefore each carpel is divided into two incomplete cells, containing two seeds, one in each cell. Seeds ovate, compressed, shining, inverted. Albumen sparing, but usually wanting, but instead there is always a fleshy tumid endopleura. Embryo straight, flat, with the radicle turned towards the hilum, and with elliptical cotyledons. (*G. Don.*)

Description, &c.—The plants belonging to this order are all remarkable for the tenacity of their fibres. There are only two genera, viz. *Linum* and *Radiola;* the latter consisting of a single species, an insignificant British weed.

GENUS I.

LINUM *Bauh.* THE FLAX.

Lin. Syst. PENTANDRIA PENTAGYNIA.

Generic Character.—Flowers with a quinary proportion of parts. Sepals entire. Styles very rarely three, but generally five, as well as the petals and stamens. (*G. Don.*)

Description, &c.—The genus Linum consists of a great number of species, some of which, like the common Flax used in making linen, are hardy annuals, generally with blue flowers; and others greenhouse or stove plants, many of which are shrubby, and which have generally yellow flowers, though some are white or brownish. Of course, only the greenhouse species will be described in this work.

1.—LINUM ARBOREUM *Lin.* THE TREE FLAX.

Synonyme.—L. campanulatum *Dec.*

Engravings.—Bot. Mag., t. 234; and our *fig.* 3, in Pl. 5.

Specific Character.—Shrubby, glabrous, glaucous. Leaves cuneiform, obtuse, alternate, recurved. Flowers few, somewhat capitate. Sepals oval-lanceolate, acuminated. Petals thrice as long as the calyx. Style free. Stigmas oblong. (*G. Don.*)

Description, &c.—Though this plant is called the Tree Flax, it is, in fact, only a shrub, which rarely grows more than two feet high when kept in a pot in a greenhouse. It is a very pretty greenhouse plant, from its glaucous leaves and golden-yellow flowers, which it generally begins to produce in March, and which continue during the whole of the summer. It is a native of the Levant, whence it was introduced in 1788 by Dr. Sibthorp

2.—LINUM TRIGYNUM *Roxb.* THE THREE-STYLED OR INDIAN FLAX.

Engravings.—Bot. Mag., t. 1100; Bot. Rep., t. 449; and our *fig.* 4, in Pl. 5.

Specific Character.—Shrubby, glabrous. Leaves alternate, elliptical, entire, pointed at both ends, feather-nerved. Flowers large, bracteate. Styles three, distinct. Capsule obtuse. Sepals lanceolate. Petals obovate, emarginate. (*G. Don.*)

Description, &c.—This very beautiful plant is a native of India; but as it is found on the top of lofty mountains, it is considered only a greenhouse shrub in this country. It is, however, best to give it a little bottom-heat, either in a flower-house, or by plunging the pot in a hot-bed, so as to stimulate it to form its flower-buds, and if it is put into heat in February, it will flower in its natural season, that is, in March or April; whereas, if it is left in the greenhouse without any bottom-heat, it will not flower till July or August, and the flowers will be very inferior both in size and beauty. If kept in a stove all the year, it will flower in November and December.

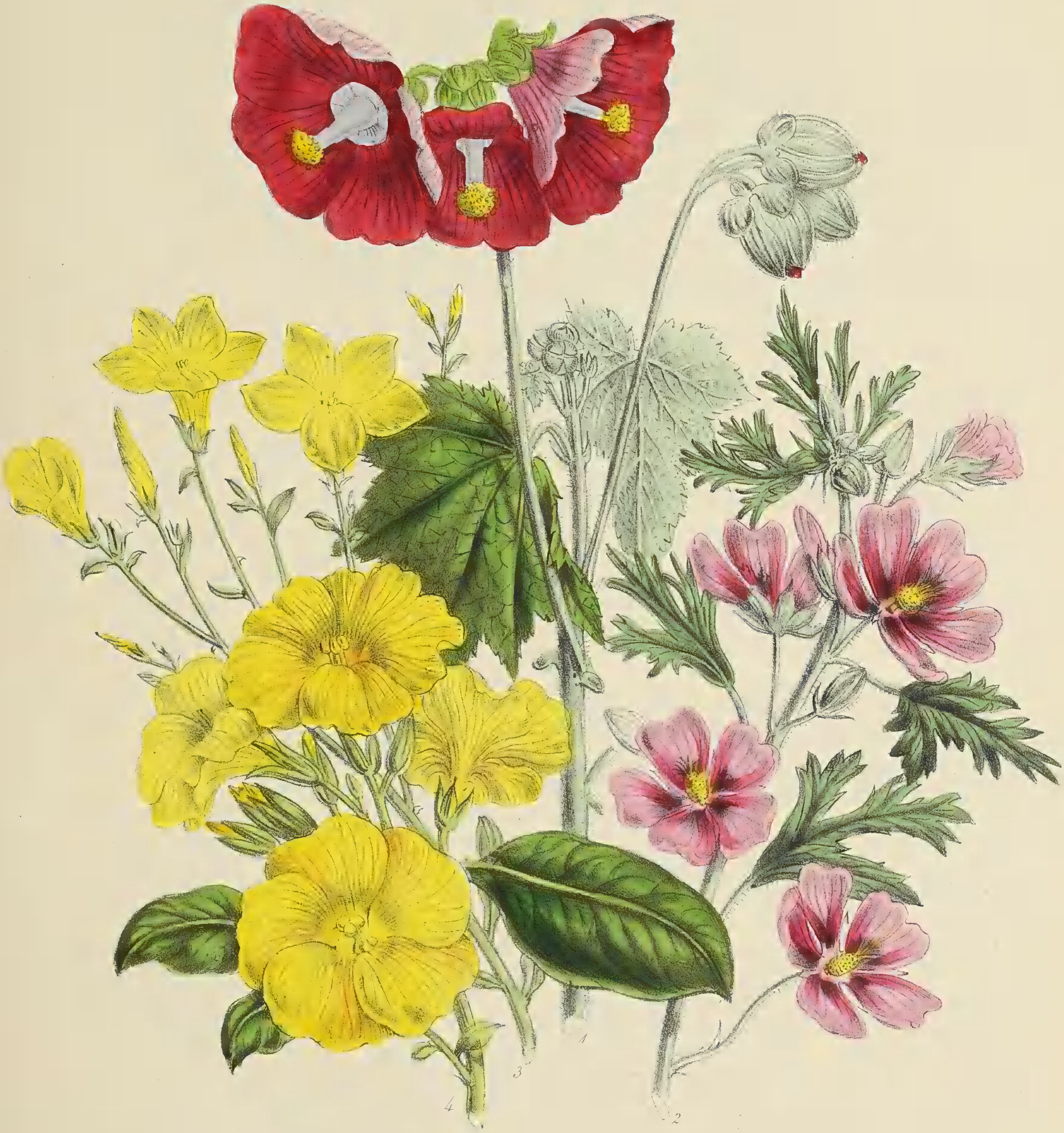
OTHER SPECIES OF LINUM.

L. AFRICANUM *Lin.*; Bot. Mag., t. 403.

This species is a very slender shrub, with yellow flowers, which are produced in June and July. It is a native of the Cape of Good Hope, whence it was introduced in 1771.

L. QUADRIFOLIUM *Lin.*; Bot. Mag., t. 431.

A pretty little herbaceous plant, with yellow flowers and glaucous leaves, the latter being produced in whorls of four each. It is a native of the Cape, whence it was introduced in 1787. It flowers in May and June.



1 Malva umbellata. _ 2 Malva Creeana.
3. Linum arboreum. _ 4. Linum trigynum

CHAPTER VII.

MALVACEÆ *Brown.*

Essential Character.—Calyx usually of five sepals, rarely three to four, more or less connected at the base, valvate in æstivation, usually bearing bracteas at the base; these constitute an outer calyx or an involucrum. Petals equal in number to the sepals, and alternating with them, hypogynous, equal, twisted in æstivation, sometimes distinct, but usually adnate to the tube of the stamens at the base. Stamens numerous, definite, but usually indefinite; filaments connected into a column, unequal, outer ones shortest; anthers one-celled, kidney-shaped, bursting by a transverse chink. Ovary usually of many carpels disposed in a whorl around the axis, almost always connected. Styles equal in number with the ovaries, sometimes distinct, sometimes joined in one, with an equal number of stigmas, which are more or less distinct. Carpels one to two-seeded, opening by a chink on the inside, sometimes many-seeded, opening by valves and with a dissepiment in the middle of each valve, bearing the seeds, sometimes nearly free, sometimes connected into a many-celled capsule, sometimes connate, into an anomalous kind of berry. Seeds ovate or somewhat triquetrous, covered by a smooth or villous epidermis. Albumen none. Embryo straight, dicotyledonous, with a terete radicle, and yellow twisted cotyledons. (*G. Don.*)

Description, &c.—Almost all the plants included in this order have showy flowers, and they all abound in mucilage. Botanically they are distinguished by the filaments of the stamens being connected into a column, inclosing the styles, and the anthers being one-celled and kidney-shaped. From these peculiarities, plants belonging to the order Malvaceæ are very easily recognised. The petals of the flowers are frequently astringent, and those of the Chinese Rose Hibiscus are said to be used in China for blacking. One of the genera of this order (*Gossypium*) produces cotton, but all its species are stove plants.

GENUS I.

MALVA *Lin.* THE MALLOW.

Lin. Syst. MONADELPHIA POLYANDRIA.

Generic Character.—Calyx five-cleft, girded by a three-leaved involucrum, or rarely with a five or six-leaved involucrum. Leaflets oblong or setaceous. Carpels capsular, many, disposed in a round head. (*G. Don.*)

Description, &c.—Very few species of Mallow are greenhouse plants, and even those that are, will generally stand out in the open air during the summer and autumn, only requiring protection during the winter, and from the frost of spring.

1.—MALVA CREEANA *Graham.* THE SHOWY RED-FLOWERED MALLOW.

Engravings.—Bot. Mag., t. 3698; and our *fig.* 2, in Pl. 5.

Specific Character.—Shrubby. Branches nearly erect. Leaves three-lobed, deeply cut, somewhat undulated, deltoid-ovate, covered with a green stellate pubescence above, and with a white dense pubescence below. Flowers solitary, axillary, on large peduncles. Leaves of the involucre filiform.

Description, &c.—This very handsome species was named in honour of Mr. Cree, of the Addleston Nursery, near Chertsey, though neither its native country nor the exact date of its introduction are known. It is supposed, however, to have been introduced about the year 1834. It is a most abundant flowerer, and it continues producing a succession of blossoms for several months.

2.—MALVA CALYCINA *Thunb.* THE BROAD-CUPPED MALLOW.

Engraving.—Bot. Reg., t. 297.

Specific Character.—Leaves cordate, crenate, sub-lobate when young, pilose, hispid. Flowers solitary. Peduncles longer than the petioles of the leaves. Sepals of the calyx very broad.

Description, &c.—This is a very handsome species, with large rose-coloured flowers, and broad dark-green leaves. It is a native of the Cape of Good Hope, where it is said to grow to the height of fifteen or sixteen feet.

The exact year of its introduction is not known, but it must have been a great many years ago, as very large woody plants of this species are occasionally found in old greenhouses.

OTHER SPECIES OF MALVA.

M. AMŒNA *Sol.*; Bot. Mag., t. 1998.

This is a very pretty kind of Cape Mallow, with rather large pink flowers, and large handsome five-lobed leaves. It is a greenhouse shrub, flowering in April and May; and it was introduced from the Cape of Good Hope in 1796.

M. DIVARICATA *Dec.*; Bot. Rep., t. 182.

This is another Cape species, very distinct in its habit of growth; its stem being twisted backwards and forwards in a zig-zag direction, and the branches growing almost at right angles with the stem, and spreading out from it as far as possible. It is a lively little greenhouse plant, and the flowers (which resemble those of *M. capensis*, being white starred with crimson at the base) continue to appear from June to December. It is easily propagated, either by cuttings, which strike freely, or by seeds, which it ripens in great abundance. It was introduced from the Cape of Good Hope about the year 1792, so that it is a very old inhabitant of our greenhouses.

M. FRAGRANS *Jacq.*; Bot. Reg., t. 296.

This species has deep crimson flowers, which are produced on long peduncles, like those of *M. Creeana*, and which are remarkable for their fragrance, which is, indeed, so powerful that it remains a long time in the hand or glove which has been drawn over the plant. It is a native of the Cape of Good Hope, whence it was introduced in 1759; and under favourable circumstances it will form a shrub twelve or fifteen feet high.

M. CAPENSIS *Lin.*; Bot. Reg., t. 295.

The common Cape Mallow is a well-known species which has been cultivated in British greenhouses since the year 1738. It is of easy culture, but it seldom exceeds the height of four or five feet; and the flowers, which are rather small, have white petals, tipped with pink at the base.

M. REFLEXA *Andr.*; Bot. Rep., t. 135.

This is a very singular species. The flowers are white, slightly stained with pink, and the petals are very long, and placed widely apart. The leaves are wedge-shaped, and cut into very unequal lobes. But what particularly distinguishes this species is, that when the flowers are fully expanded, the petals turn back to the stem, like those of the Martagon, or Turk's-Cap Lily, and this has so singular an appearance, that it is scarcely possible to suppose the plant to be a Mallow. It is a native of the Cape of Good Hope, and was introduced in 1794.

M. GROSSULARIÆFOLIA *Willd.*; Bot. Reg., t. 561.

This species very closely resembles *M. fragrans*, except in its being entirely without odour, and having much smaller leaves. It is also nearly hardy, only requiring protection from frost. It seeds freely, and is easily propagated by cuttings.

M. MINIATA *Cav.*; Sweet's Brit. Flow. Gard., 2d ser., t. 120.

This is rather a singular growing plant, the flowers being produced five or six together on one peduncle, all growing on the same side of the peduncle, which is usually terminated with a small leaf. The flowers themselves are small, and of a bright vermilion colour, without any fragrance. The species is a native of Chili, whence it was introduced in 1798. It flowers in the months of October and November.

M. CONCINNA *K. & W.*; Flor. Cab., t. 38.

Another South American species, with very slender stems and small pale purple flowers. Introduced in 1835.

GENUS II.

SPHÆRALCEA *St. Hilaire.* THE GLOBE-MALLOW.

Lin. Syst. MONADELPHIA POLYANDRIA.

Generic Character.—Calyx five-cleft, girded by a shorter deciduous three-leaved involucel. Carpels many, separable, verticillate, two to three-seeded, opening by two little valves on the back, disposed into a globular head. Seeds kidney-shaped. (*G. Don.*)

Description, &c.—The plants included in this genus were separated from the Malvas by M. Auguste St. Hilaire on account of the globe-like form of the carpels.

1.—SPHÆRALCEA UMBELLATA *G. Don.* THE UMBELLATE GLOBE-MALLOW.

Synonymes.—Malva umbellata *Cav.*; M. rosea *Dec.*
Engravings.—Bot. Reg., t. 1608; Lodd. Bot. Cab., t. 222; and our *fig.* 1, in Pl. 5, under the name of Malva umbellata.

Specific Character.—Leaves sub-peltate, five-lobed, obtuse. Peduncles axillary, umbelliferous. Leaflets of the involucel obovate, somewhat stipitate, deciduous.

Description, &c.—This very splendid and curious plant is a native of Mexico, whence it was introduced in 1826, and where it forms a shrub ten feet high. It is tolerably hardy as respects cold, but is easily killed by damp.

OTHER SPECIES OF SPHÆRALCEA.

S. ABUTILOIDES *Dec.*; Bot. Mag., t. 2544.

A plant having very much the habit of the common Marsh-Mallow, and possessing no beauty. A native of the Bahama Islands. Introduced in 1725.

S. OBTUSILOBA *G. Don.*; Bot. Mag., t. 2787.

A plant of no beauty, with dingy purple flowers; a native of Chili, whence it was introduced in 1827.

S. ANGUSTIFOLIA *Cav.*; Bot. Mag., t. 2839.

A suffruticose species, with pinkish flowers, and large leaves, which are four or five inches long. It is a native of Mexico, and is nearly hardy in British gardens, only requiring protection from the frost.

GENUS III.

HIBISCUS *Lin.* THE HIBISCUS.

Lin. Syst. MONADELPHIA POLYANDRIA.

Generic Character.—Calyx encompassed by a many-leaved, rarely by a few-leaved involucel, sometimes connected at the base. Petals not auricled. Stigmas five. Carpels joined into a five-celled, five-valved capsule, with a dissepiment in the middle of each valve on the inside. Cells many-seeded, rarely one-seeded. (*G. Don.*)

Description, &c.—The species of this genus are some of them stove-plants, others greenhouse plants, and others quite hardy; but nearly all the kinds are remarkable for the beauty of their flowers. The name of

Hibiscus is said to be derived from *Ibis* a stork, that bird being said to be exceedingly fond of pecking the leaves of some of the species. The bark of all the kinds of Hibiscus is so tough that it may be made into ropes, or spun into coarse thread like hemp.

1.—HIBISCUS PEDUNCULATUS *Cav.* THE LONG-STALKED CAPE HIBISCUS.

ENGRAVING.—Bot. Reg., t. 231.

SPECIFIC CHARACTER.—Leaves three or five-lobed, obtuse, crenated, hairy. Peduncles axillary, twice as long as the leaves. Corolla campanulate.

DESCRIPTION, &c.—This is a very ornamental greenhouse plant, which blossoms freely about July; the beauty of its large rose-coloured flowers being greatly enhanced by the dusky green of its foliage. It is an upright shrub, growing about two feet high. The flowers are somewhat campanulate. The plant is a native of the Cape of Good Hope, and was introduced in 1812. The flowers appear from May to December.

2.—HIBISCUS MANIHOT *Lin.* THE PALMATE MANIHOT.

ENGRAVINGS.—Bot. Mag., t. 1702; and our *fig.* 4, in Pl. 6.

SPECIFIC CHARACTER.—Stem unarmed. Leaves smoothish, palmately parted into five or seven acuminated coarsely-toothed lobes. Involucel four or six-leaved, hispid. Pedicels when in flower declinate. (*G. Don.*)

DESCRIPTION, &c.—This beautiful plant, which is a native of China and Japan, was first sent to this country in the year 1712, being one of the plants which at that period was annually presented to the Royal Society from the Apothecaries' Garden at Chelsea. When Sir Hans Sloane gave a piece of ground at Chelsea to be laid out as a Botanic Garden, it was upon condition that the Apothecaries' Company, to whom the garden was to belong, should present to the Royal Society every year fifty new plants, till the number of two thousand five hundred plants had been thus presented, that being supposed to include all the plants likely to be obtained. This species produces its bright yellow flowers in August and September, and though it is frequently treated as a stove shrub, it is found to thrive equally well in a greenhouse, and, like many other Japan plants, it will probably stand even in the open air.

3.—HIBISCUS TELFAIRIÆ *Benth.* MRS. TELFAIR'S HIBISCUS.

ENGRAVING.—The Botanist, t. 212.

SPECIFIC CHARACTER.—Stem shrubby, branched. Leaves petiolate, ovate, subobtuse, glabrous, crenate or dentate; petioles pubescent; stipules subulate. Peduncles shorter than the leaves. Petals longer than the style and stigmas.

DESCRIPTION, &c.—This very beautiful species of Hibiscus is a hybrid raised at Bury Head, near Dorking, in 1825. It is a dwarf plant, never exceeding two feet in height, and it has rose-coloured flowers about the size of a single Camellia. It is always kept in a greenhouse.

4.—HIBISCUS HETEROPHYLLUS *Vent.* THE VARIOUS-LEAVED HIBISCUS.

SYNONYME.—H. grandiflorus *Salisb.*

ENGRAVING.—Bot. Reg., t. 29.

SPECIFIC CHARACTER.—Stem shrubby, prickly. Leaves lanceolate, acuminate, for the most part three-lobed, with prickly serratures. Involucel ten-leaved. (*G. Don.*)

DESCRIPTION, &c.—This very beautiful plant is a native of New Holland, and requires a greenhouse in this country. In its native country it forms a large-sized shrub, and the natives make its bark into cordage. In England it grows best in a conservatory, where it is extremely ornamental, not only for its flowers, but for its leaves, which vary exceedingly. The only drawback to its cultivation is, that its flowers last a very short time, falling almost as soon as they have expanded.

5.—HIBISCUS RACEMOSUS *Lindl.* THE NEPAL HIBISCUS.

Engraving.—Bot. Reg., t. 917.

Specific Character.—Stem shrubby, covered with a stinging pubescence. Leaves five-lobed, much longer than the peduncles, cordate, subrotund, serrated, woolly. Raceme terminal.

Description, &c.—A very handsome shrub, with yellow flowers, and having much the habit of growth of a hollyhock. The stem is covered with a number of transparent hairs, which, on being pressed, create a slight stinging sensation. It flowers freely, and appears very nearly hardy.

6.—HIBISCUS MILITARIS *Pursh.* THE MILITARY HIBISCUS.

Synonymes.—H. lævis *Scop.*; H. virginicus *Walter*; H. hastatus *Michx.*; H. riparius *Pers.*

Engravings—Bot. Mag., t. 2385; and our *fig.* 1, in Pl. 6.

Specific Character.—Very smooth. Leaves trilobed, somewhat halbert-shaped, middle lobe acuminate, serrated. Corolla tubularly campanulate. Capsules ovate, acuminate, smooth. Seeds silky.

Description, &c.—This very handsome species is a native of Carolina and Louisiana, and it is generally found growing on the banks of rivers It flowers in August and September. It is tolerably hardy, and will sometimes live through the winter in the open air, but its flowers will not come to perfection without artificial heat. It is best grown in a pot and kept in a greenhouse during winter, and then placed in a flower house or plunged in a hot-bed to bring it forward in spring. It was introduced in 1804.

7.—HIBISCUS SPECIOSUS *Lin.* THE SHOWY HIBISCUS.

Synonyme.—H. coccineus *Walt.*

Engraving.—Bot. Mag., t. 360.

Specific Character.—Leaves smooth, palmately five-parted, with lanceolate acuminated lobes which are serrated at the apex. Corolla spreading. Capsule ovate, smooth, five-angled. (*G. Don.*)

Description, &c.—This magnificent species is another native of South Carolina, Louisiana, and Florida, where it was found on the banks of rivers, growing in similar situations to *H. militaris.* *H. speciosus* is, however, a herbaceous plant, and not at all shrubby, though it sends up every year from the root a stem many feet in height, supporting at its summit several flowers, which are remarkable for the brilliancy and richness of their colour, which is scarlet with a tint of crimson. The plant is tolerably hardy, and will grow in the open air during summer, provided it is kept in a greenhouse during the winter, and set in a flower house or plunged into a hot-bed in the spring, to force it to form its flower-buds. It will flower without this precaution, but the flowers will be very inferior both in size and beauty.

8.—HIBISCUS PALUSTRIS *Lin.* THE MARSH HIBISCUS.

Synonymes.—Althæa palustris *Bauh.*; A. hortensis *Dod.*; Ketmia palustris *Tourn.*

Engraving.—Bot. Mag., t. 882.

Specific Character.—Leaves ovate, toothed, somewhat three-lobed, hoary with down beneath; pedicels axillary, free from the petioles, jointed above the middle. (*G. Don.*)

Description, &c.—A splendid plant, a native of North America, where it is found in swamps and marshes, from Canada to Carolina. It is generally considered a greenhouse plant in this country, though it will stand the winter in the open air. It will not, however, flower well without the aid of some artificial heat. It was introduced in 1759

9.—HIBISCUS CAMERONI *W. and K.* MR. CAMERON'S HIBISCUS.

Engravings.—Bot. Mag., t. 3936; Flor. Cab., t. 82. Of the variety, H. C. fulgens, Bot. Reg. for 1844, t. 28; and our fig. 2, in Pl. 6.

Specific Character.—Stem shrubby. Leaves five-lobed, segments dentate. Petals ovate, obtuse; margin wavy. Involucel minute.

Description, &c.—This plant has a very singular flower as regards its colour. The petals have a wavy margin of a dull buff colour, tinted with rose, and strongly veined with deep maroon; the claws of the petals, forming the eye, are of a bright buff, surrounded by a deep and red-headed ring of dark maroon colour. This beautiful plant is a native of Madagascar, whence it was introduced in 1837, and first raised from seed in the Birmingham Botanic Garden, the seeds having been brought home by some of the Missionaries. A very beautiful garden variety, figured in the "Botanical Register" for 1844, t. 28, has been raised between *H. Cameroni* and *H. speciosus*. It flowered for the first time in 1843.

10.—HIBISCUS WRAYÆ *Lindl.* MRS. WRAY'S HIBISCUS.

Engraving.—Bot. Reg., 1840, t. 69.

Specific Character.—Stem shrubby, covered with tomentum. Leaves palmate, cordate, woolly; lobes obovate, pinnatifidly cut; segments rounded, subcrenate. Peduncles axillary, two-flowered, longer than the leaves. Involucel fifteen-toothed. Segments of the stigma linear, revolute.

Description, &c.—A most beautiful plant with large lilac flowers, which was raised from Swan River seeds, by Mrs. Wray, of Cheltenham. It is a greenhouse shrub of very easy cultivation, which grows so luxuriantly that it will attain the height of eight or ten feet in one season, if planted in a conservatory. It continues in flower nearly all the year.

11.—HIBISCUS LILACINUS *Lindl.* THE LILAC HIBISCUS.

Engravings.—Bot. Reg., t. 2009; and our *fig.* 3, in Pl. 6.

Specific Character.—Glabrous. Leaves entire, or three-parted into linear or trifid lobes; segments linear-lanceolate, acuminate, sometimes pinnatifid and coarsely toothed. Involucel obsolete, or six-parted; segments subulate. Segments of the calyx acuminate, three-ribbed, twice as long as the tube of the flower. Corolla funnel-shaped, much longer than the calyx, club-shaped, not divided.

Description, &c.—This is another species from the Swan River, the seeds of which were sent home by Sir James Stirling, and raised by Robert Mangles, Esq., in the year 1840. The flowers are extremely beautiful, and very unlike most of the half-hardy kinds of Hibiscus. The plant has hitherto been kept in a greenhouse, but it will probably prove sufficiently hardy to stand in the open ground during the summer.

OTHER KINDS OF HIBISCUS.

There are several other kinds of greenhouse Hibiscus, but those that have been described are the most ornamental.

GENUS IV.

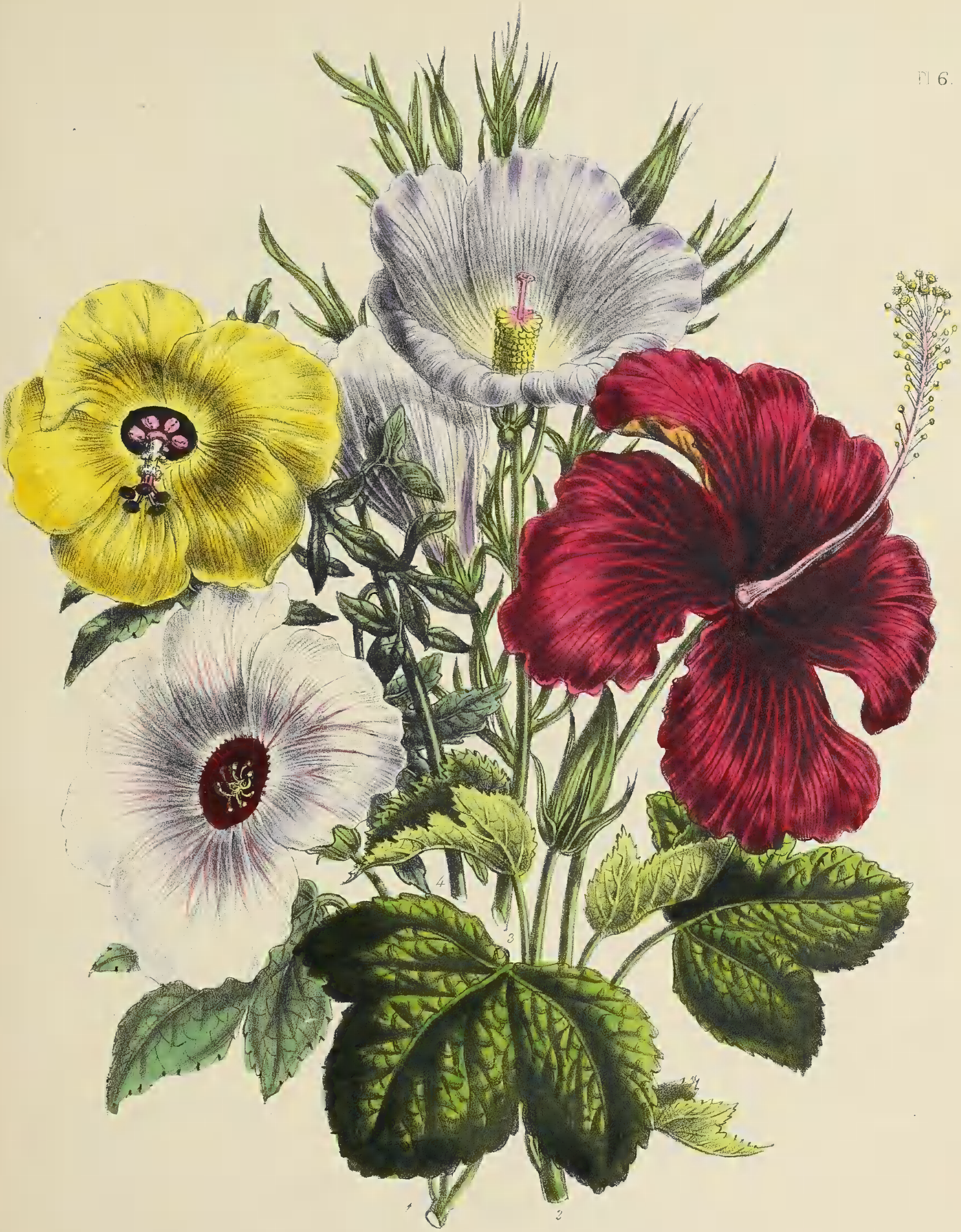
SIDA *Cav.* THE SIDA.

Lyn. Syst. MONADELPHIA POLYANDRIA.

Generic Character.—Calyx naked, five-cleft, usually angular. Style multifid at the apex. Carpels capsular, five to thirty, in a whorl around the central axis, more or less connected together, one-celled, one-seeded, mutic or awned at the apex. (*G. Don.*)

Description, &c.—The plants belonging to this genus have generally small flowers only partially opened. They are all natives of hot countries, but most of them will flower in a greenhouse almost as well as in a stove; the difference being, that the flower becomes paler and more expanded when exposed to the influence of heat. The kinds generally found in British gardens are, *S. grandifolia*, which has small dark orange flowers, when kept in a greenhouse, but the flowers of which become much larger and yellow when kept in a stove; *S. rosea*, a native of Brazil, which has small globe-shaped flowers of a brilliant scarlet; *S. globiflora*, the flowers of which are of the same shape as those of *S. rosea*, but of a cream colour; and *S. inæqualis*, the flowers of which are campanulate, and of a beautiful cream-colour.

Pl 6.



1 Hibiscus militaris 2 Hibiscus Cameroni fulgens 3 Hibiscus lilacinus 4 Hibiscus Manihot

GENUS V.

ABUTILON *Kunth.* THE ABUTILON.

Lin. Syst. MONADELPHIA POLYANDRIA.

Generic Character.—Calyx naked, five-cleft, usually angular. Style multifid at the apex. Carpels capsular, usually bladdery, five to thirty, in a whorl around the central axis, one-celled, three or many-seeded, connected so closely together as to form a many-celled capsule, mutic or awned at the apex. (*G. Don.*)

Description, &c.—This genus has been divided from Sida from a difference in the seed-vessel; which, in both genera, consists of several carpels, each carpel in Sida containing only one seed, while in Abutilon each carpel is many-seeded and usually bladdery. Almost all the plants now called Abutilon were originally supposed to belong to Sida. They are all very ornamental, and nearly all will flower in a greenhouse, though they appear to thrive better if kept in a stove at least part of the year. Some of the species will flower in the open air if brought forward in a flower-house or stove.

1.—ABUTILON STRIATUM *Dickson.* THE STRIPED ABUTILON.

Synonyme.—Sida picta *Gill.*

Engravings.—Bot. Mag., t. 3840; The Botanist, t. 144; and our *fig.* 1, in Pl. 7.

Specific Character.—Leaves trilobed, serrated, very smooth, subcordate at the base. Peduncles very slender, and very long. Flowers campanulate. Styles eight, projecting beyond the stamens. Stigmas capitate.

Description, &c.—This species is a native of Brazil, and it is found abundantly both on the lofty Organ Mountains, and in the valleys beneath. In this country it grows freely, and flowers abundantly in a moist stove; but it also flowers freely, and becomes a stronger, though smaller, plant in a greenhouse, where its flowers continue to appear nearly all the year. The flowers in this country rarely open, but hang drooping on their long stems, only half-expanded, as represented in our figure; but when exposed to the strong light of a tropical sun, the petals are said to open widely, and even to curve back. The plant is generally grown in a pot, one quarter of which is filled with broken potsherds, to insure perfect drainage. The soil should be a light sandy loam. As the stems are very slender, particularly when the plant is grown in a stove, they require to be supported by being trained against a wall or a trellis. Sometimes this species is planted in the open air; and it will grow and flower, though not so freely as under glass, if in a sheltered situation, and protected from the winter and spring frosts. It was introduced in 1830. The species figured in the "Botanical Magazine," t. 3892, and called there *Sida Bedfordiana,* closely resembles *Abutilon striatum,* in its general appearance, but it differs in being a small tree, in the peduncles being articulated, which frequently occasions the flowers to fall before the seed-pods are formed, and in the petals and divisions of the calyx being slightly different in their form. The colour of the flowers is exactly the same.

2.—ABUTILON VITIFOLIUM *Presl.* THE VINE-LEAVED ABUTILON.

Synonyme.—Sida vitifolia *Cav.*

Engravings.—Bot. Reg. for 1844, t. 57; Bot. Mag., t. 4227; and our *fig.* 2, in Pl. 7.

Specific Character.—Leaves cordate, three, five, or seven-lobed; lobes acuminate, serrated. Peduncles terminal, racemosely umbellate, longer than the petioles. Carpels nine, united in a circle.

Description, &c.—This is by far the handsomest species of the genus, and when planted in the free ground of a conservatory, it forms a bushy shrub, six feet high, with large vine-like leaves, and a profusion of beautiful lilac flowers, which make it seem one mass of blossom. In the neighbourhood of Dublin it has stood out upwards of three years without any protection. When kept in a greenhouse, it should be grown in a tub, to allow the roots plenty of room. "The worst of this plant," says Dr. Lindley, "is, that it occupies a great deal of room, and, therefore, can only be grown in large houses; and, secondly, that it is, like all its family, a favourite resort of the red spider." The plant requires as much light and air as can conveniently be given to it, and the most suitable soil for it is heath-mould mixed with silver sand. It is a native of Chili, and seeds of it were first brought to Europe by Captain Cottingham, in 1836.

3.—ABUTILON PÆONIÆFLORUM. THE PÆONY-FLOWERED ABUTILON.

Synonyme.—Sida pæoniæflora *Hook.*

Engraving.—Bot. Mag., t. 4170.

Specific Character—Shrubby. Branches round, pubescently hairy. Leaves on short petioles, broad, ovate, acuminate, serrated, pubescent; stipules subulate, deciduous. Peduncles axillary, two or three together, one-flowered, shorter than the leaves. Calyx ventricose. Petals concave, roundish, strongly veined. Ovary globose. Style dividing into twelve or thirteen erect branches, each with a capitate stigma.

Description, &c.—This very ornamental species is a native of the Organ Mountains of Brazil, where it was found by Mr. Lobb, the indefatigable collector of Messrs. Veitch, Nurserymen, Exeter, who have been the means of introducing so many beautiful plants from the same region. This species requires the same treatment as *Abutilon striatum*, and may be grown either in the greenhouse or in the stove, and probably in the open air, though this last has not yet been tried.

4.—ABUTILON GRAVEOLENS *White et Arn.* THE HEAVY-SCENTED ABUTILON.

Synonymes.—Sida graveolens *Roxb.;* S. hirta *Reich;* S. tomentosa *Wall.*

Engravings.—Bot. Mag. t. 4134; and our *fig.* 3, in Pl. 7.

Specific Character.—Branches covered with spreading hairs. Leaves cordate, obsoletely lobed, dentate, very downy on both sides. Peduncles axillary, solitary, one-flowered, jointed below the calyx. Petals imbricated. Style divided into numerous branches, each bearing a small globose stigma.

Description, &c.—This species is much more tender than the others, being a native of the East Indies. It has soft pale green foliage, and golden yellow flowers, which are short and stained with red, so as to give them an orange hue. The flowers are fragrant, but they have an oppressive odour. The species was introduced in 1843.

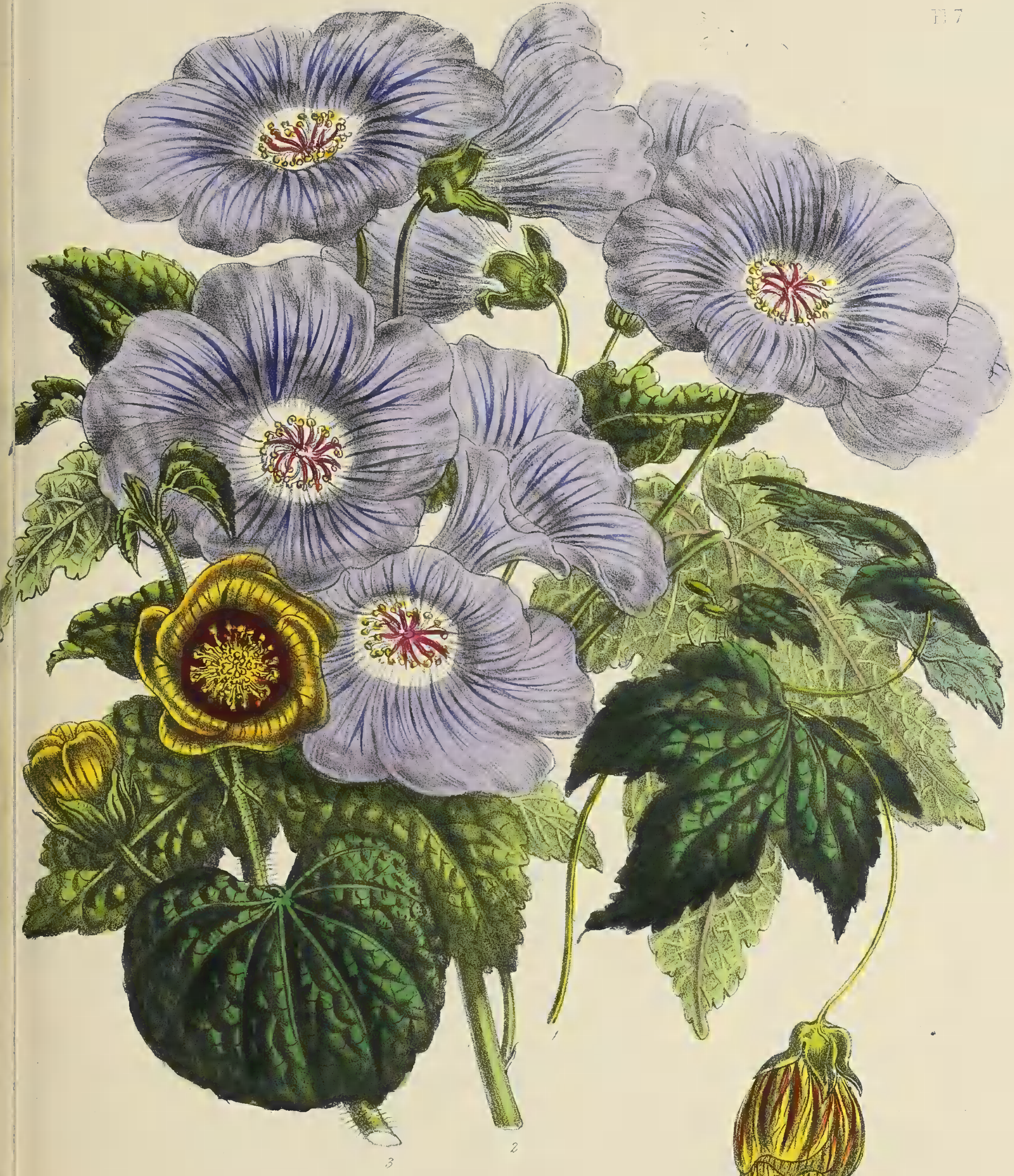
CHAPTER VIII.

PITTOSPORACEÆ *Lindl.*

Essential Character.—Calyx of five deciduous sepals, which are sometimes free, and sometimes united together to the middle; they are imbricate in the bud. Petals five, hypogynous, with the claws conniving, sometimes united, with spreading laminæ, which are imbricate in the bud. Stamens five, hypogynous, distinct, alternating with the petals. Ovary one, free, with the cells or placentas two to five or many-seeded. Style one, crowned by numerous stigmas, which are equal in number to the placentas or cells of the ovary. Pericarp capsular or baccate; cells many-seeded, sometimes incomplete. Seeds usually covered with glutinous pulp. Embryo minute, placed near the umbilicus in a fleshy albumen, with a longish radicle and short cotyledons. (*G. Don.*)

Description, &c.—This order contains plants widely different from each other, some of which are evergreen shrubs, with thick leaves and rather small flowers, while others are climbing or twining shrubs, with well-shaped flowers, which in some of the species are highly ornamental. Notwithstanding this apparent difference, the plants contained in this order are all easily known by their seeds being covered with a resinous pulp, so that the fruit, though it forms a pulpy berry, is uneatable, from its strong flavour of turpentine. Several of the most ornamental genera are of recent introduction.

Pl 7



1. Abutilon striatum 2. Abutilon vitifolium 3. Abutilon graveolens

GENUS I.

BILLARDIERA *Smith.* THE APPLE-BERRY.

Lin. Syst. PENTANDRIA MONOGYNIA.

Generic Character.—Calyx of five acuminated sepals. Petals five, with approximate claws, which are somewhat convolute at their edges, forming a bell-shaped flower. Berry elliptical, terminated by the style. (*G. Don.*)

Description, &c.—The plants belonging to this genus are climbing shrubs, natives of New Holland and Van Diemen's Land. The flowers are bell-shaped and generally pretty, and the fruit, which is pulpy, would be eatable if it were not for its strong resinous flavour, which most persons find very disagreeable. It is very ornamental, however, when ripe. All the species thrive best in a conservatory, but are very nearly hardy.

1.—BILLARDIERA SCANDENS *Smith.* THE CLIMBING BILLARDIERA, OR APPLE-BERRY.

Engraving.—Bot. Mag., t. 801.
Specific Character.—Branches climbing, younger ones villous. Leaves linear-oblong, entire; pedicels one-flowered, villous, shorter than the flowers. Berries velvety. (*G. Don.*)

Description, &c.—This was the first species discovered of the genus, and as it was found by Labillardière, it was very appropriately named after him. Dr. Labillardière was a Frenchman, who sailed as botanist on board one of the ships sent to the South Seas in search of the unfortunate M. De La Peyrouse. Though called the Climbing Billardiera, it is less disposed to climb than any other of the species. The first colonists in Van Diemen's Land set a high value on the fruit of this plant, which they considered the only kind eatable in the colony, and compared it to roasted apple, and hence the plant received its English name of Apple-Berry. It has, however, like that of all the other species of the genus, a strong flavour of turpentine. The flowers are cream-coloured. The species was introduced in 1790.

2.—BILLARDIERA MUTABILIS *Salisb.* THE CHANGEABLE APPLE-BERRY.

Engravings.—Bot. Mag., t. 1313; and our *fig.* 2, in Pl. 8.
Specific Character.—Branches climbing, younger ones rather villous. Leaves lanceolate-linear, entire. Peduncles one-flowered, glabrous, the length of the flower. Berries glabrous. (*G. Don.*)

Description, &c.—This is a still more slender-stemmed plant than the preceding species, and the flowers, which are larger, are first of a pale greenish yellow, but afterwards become of a rich dark purple. The berries are long, green, and perfectly smooth. It is a native of New Holland, and was introduced in 1795.

3.—BILLARDIERA LONGIFLORA *Labill.* THE BLUE-BERRIED BILLARDIERA.

Engraving.—Bot. Mag., t. 1507.
Specific Character.—Branches climbing, younger ones scarcely pubescent. Leaves lanceolate, entire. Peduncles one-flowered, glabrous, one-half shorter than the flowers. Berries almost globose unequal on the surface, glabrous.

Description, &c.—This species is perhaps the hardiest of the genus, as it will stand perfectly well in the open air against a south wall, and it is very ornamental, from its fruit, which is nearly globular and deeply grooved. It is covered with a shining skin, and when ripe is of a fine violet blue. This is, perhaps, the most decidedly a climber of all the species, as its long twining shoots take hold of everything within their reach. It flowers from July to August, and towards the latter end of that month it begins to ripen its fruit. It is propagated by cuttings or by seeds, which it ripens in abundance. It was introduced in 1810. When grown under glass, it does best planted in the free ground of a conservatory, and trained up a pillar, where its long pale yellow flowers and very ornamental dark blue fruit will be seen to the best advantage.

4.—BILLARDIERA OVALIS *Lindl.* THE OVAL-LEAVED BILLARDIERA.

Engraving.—Bot. Reg., t. 1719.

Specific Character.—Younger branches pubescent. Leaves linear-oblong, obtuse. Peduncles one-flowered, glabrous, nearly as long as the flowers. Petals straight, and somewhat obtuse.

Description, &c.—This is a very pretty species, with compact leaves, somewhat like those of the box-tree, and rather small greenish flowers, the stamens of which have blue anthers. It is a native of Van Diemen's Land, and is very nearly hardy in this country. Its flowers appear in May, and it is said that before they die off they change from a greenish yellow to a dark purple.

OTHER SPECIES OF BILLARDIERA.

There are several other species of Billardiera, but as they have not been introduced, it appears doubtful whether they belong to this genus or to Sollya.

GENUS II.

SOLLYA *Lindl.* THE SOLLYA.

Lin. Syst. PENTANDRIA MONOGYNIA.

Generic Character.—Calyx five-leaved. Petals five, spreading. Anthers connivent, cohering at the apex. Stigma two-lobed. Pericarp two-celled, many-seeded.

Description, &c.—The species included in this genus have been separated from Billardiera, from the difference in the anthers and in the shape of the flowers. In all the kinds of Billardiera the flower-stalks spring from the axils of the leaves; the flowers themselves are long, and the petals form a tube at their base; the stamens are long; and the anthers far apart from each other. The flower-stalks of the Sollya, on the contrary, grow opposite to the leaves; the flowers are bell-shaped, and the stamens short, "with the anthers adhering in a cone round the style, and opening by two pores at their points." The fruit was at first supposed to be a dry papery carpel, but it is now found to be a succulent berry, filled with a soft pulp, in which two rows of seeds are set fast: when ripe, the fruit has the resinous smell common to all the plants of the order, but the taste is not quite so disagreeable as that of the common Apple-Berry. Only two species of Sollya have been introduced; and though a third has been described, it is supposed by Dr. Lindley to be only a variety of S. heterophylla. The genus was named by Dr. Lindley, in honour of Richard Horsman Solly, Esq., F.R.S., &c.

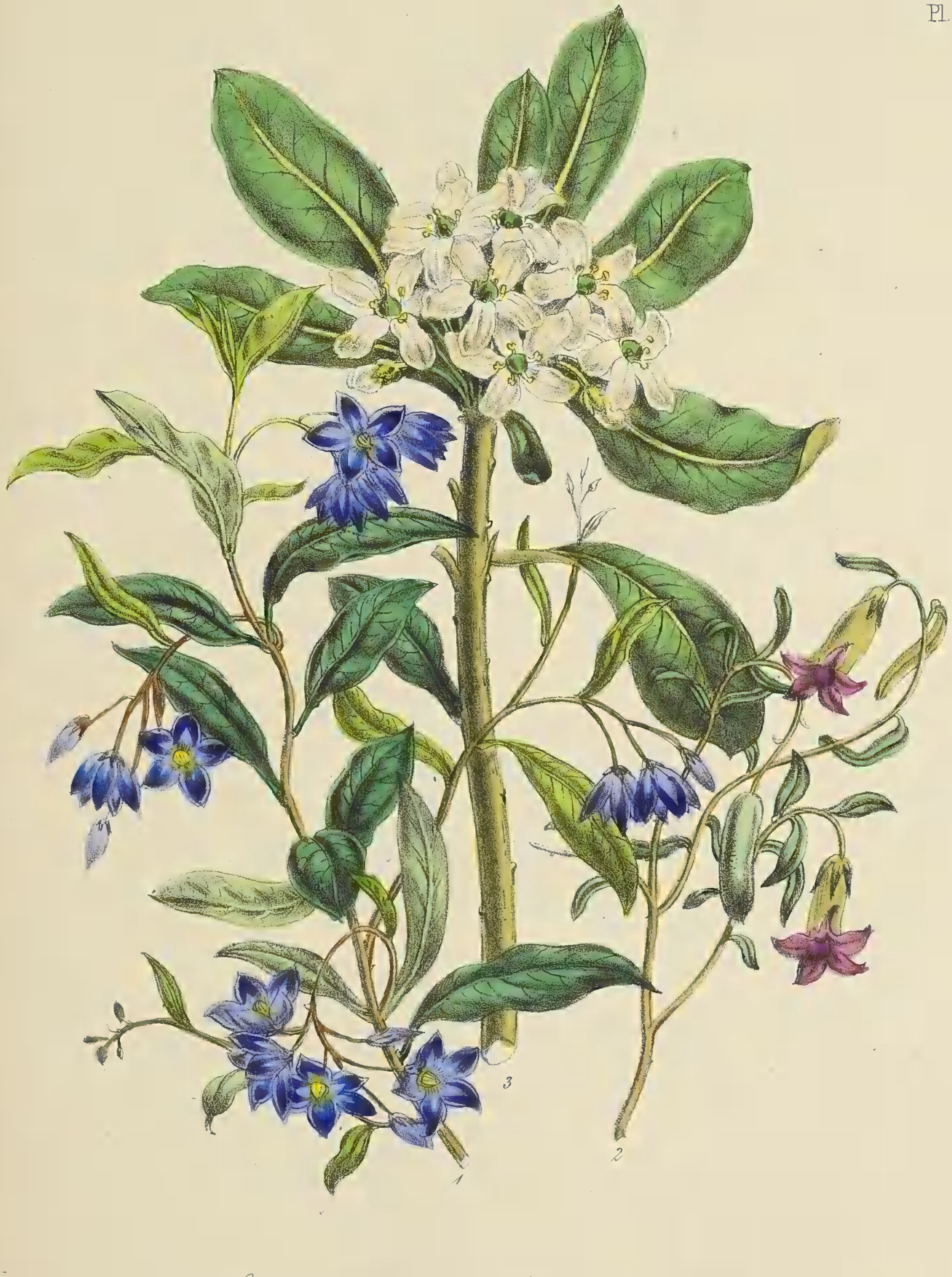
1.—SOLLYA HETEROPHYLLA *Lindl.* THE COMMON SOLLYA.

Synonyme.—Billardiera fusiformis *Labill.*

Specific Character.—Leaves ovate-lanceolate; lower ones serrated; upper ones entire; petioles winged.

Engravings.—Bot. Reg., t. 1466; Bot. Mag., t. 3523; Sweet's Brit. Flow. Gard., 2d ser., t. 232; Lodd. Bot. Cab., t. 1975; and our *fig.* 1, in Pl. 8.

Description, &c.—This beautiful little plant, which is now become an universal favourite, was introduced about the year 1830, and was at first supposed to be sufficiently hardy to grow in the open air. It is now found, however, to be more suitable to a greenhouse or conservatory; and it is also found to be a valuable window or balcony plant, as it grows well and flowers freely in a small pot.



1 *Sollya heterophylla* 2 *Billardiera mutabilis*
3 *Pittosporum Tobira*

2.—SOLLYA LINEARIS *Lindl.* THE NARROW-LEAVED SOLLYA.

Engraving.—Bot. Reg., 1840, t. 3.

Specific Character.—Leaves very smooth, linear or linear-lanceolate. Cymes many-flowered. Stigma nearly simple. Fruit oblong.

Description, &c.—This species differs from the preceding one in having rather narrower leaves, which are never serrated, and darker, though rather smaller flowers, which are produced in such abundance that there are sometimes as many as eleven flowers in one cluster, and five or six clusters on a single branch. The species is a native of the Swan River Colony, and it was introduced in 1840. It is best propagated by seeds, as cuttings of it are rather difficult to strike; and, like the preceding species, it grows best in a pot in a mixture of loam and peat. When, however, planted in a conservatory it forms a handsome bush, and it will live in the open air in a sheltered situation, if protected from severe frosts.

GENUS III.

PITTOSPORUM *Banks.* THE PITTOSPORUM.

Lin. Syst. PENTANDRIA MONOGYNIA.

Generic Character.—Calyx of five sepals. Petals five, with the claws conniving into a connate tube. Capsules smooth or hairy, two to five-valved, one-celled, bearing a dissepiment in the middle of each valve. Seeds covered with a resinous pulp. (*G. Don.*)

Description, &c.—The plants belonging to this genus are evergreen shrubs, with the habit of the Spurge Laurel. The flowers are produced in terminal clusters, and are either white or yellowish.

1.—PITTOSPORUM TOBIRA *Ait.* THE CHINESE PITTOSPORUM.

Synonymes.—P. chinense *Donn.;* Euonymus Tobira *Thunb.*
Engravings.—Bot. Mag., t. 1396; and our *fig.* 3, in Pl. 8.

Specific Character.—Leaves obovate, obtuse, very smooth, leathery. Capsules three-valved.

Description, &c.—This is a large and very handsome shrub, with shining glossy leaves, and terminal clusters of white flowers, which assume a yellow tinge when they begin to fade, and which are very fragrant. If, however, the leaves or bark should be bruised, their smell is very disagreeable, and their taste nauseous. The plant is a native of Japan and China, whence it was introduced in 1804. It is very nearly hardy, and flowers nearly all the summer. It should be planted in the free soil of a conservatory, as it will not grow well unless its roots have plenty of room. It is propagated by cuttings, as its seeds have not ripened in this country. Tobira is the name of the plant in Japan.

2.—PITTOSPORUM CORIACEUM *Ait.* THE LEATHERY-LEAVED PITTOSPORUM.

Engravings.—Bot. Rep., t. 151; and Lodd. Bot. Cab, t. 569.

Specific Character.—Leaves obovate, obtuse, coriaceous, quite smooth. Peduncles umbellately branched, many-flowered.

Description, &c.—This very handsome species is a native of Madeira, whence it was introduced in 1783. It should be planted in a conservatory, in rich earth, when it will form a shrub six or eight feet high, very ornamental from its smooth leathery leaves and snow-like flowers, which have the odour of the Jasmine, but which are not very durable. They appear in May. It is rather difficult to propagate this plant, as it will not ripen its seeds in this country, and does not grow readily from layers. The best way is to make cuttings from the plant in April, and to fix them rather tight in stiff loam. The pot containing them is then placed under a hand-glass on a shady border till autumn, when it is removed either to the hothouse and plunged into the bark bed, or plunged into a hotbed. Thus treated, the cuttings will generally begin to grow the following spring.

3.—PITTOSPORUM REVOLUTUM *Ait.* THE YELLOW-FLOWERED PITTOSPORUM.

Synonymes.—P. tomentosum *Bonpl.*; P. flavum *Rudge.*
Engraving.—Bot. Reg., t. 186.

Specific Character.—Leaves elliptic, obtuse, pubescent on the underside, revolute at the margin.

Description, &c.—This very handsome species differs considerably from all the other kinds of Pittosporum. The flowers are yellow, and are disposed in a simple drooping raceme instead of forming a cluster as in *P. Tobira.* The branches and the under side of the leaves are covered with a bright reddish brown pubescence, and the plant forms a compact shrub, seldom growing above two or three feet high. It is a native of New South Wales, whence it was introduced by Sir Joseph Banks in 1795.

OTHER SPECIES OF PITTOSPORUM.

P. VIRIDIFLORUM *Sims.*—Bot. Mag., t. 1684.

This species is a native of the Cape of Good Hope, whence it was introduced in 1806. The flowers are small and green, having no beauty, but with a very fragrant scent, resembling that of the Lemon-scented Verbena.

P. UNDULATUM *Andr.*—Bot. Rep., t. 393.

A very handsome species, with large glossy leaves, which are so far undulated that they look shrivelled up. The flowers are rather large and white, and the stems pink. Planted in a conservatory this species will grow upwards of ten feet high. It is a native of New Holland, whence it was introduced in 1789.

P. FERRUGINEUM *Ait.*—Bot. Mag., t. 2075.

A slender shrub, with very small white flowers. It is a native of Guinea, and requires a stove in this country.

GENUS IV.

BURSARIA *Cav.* THE BURSARIA.

Lin. Syst. PENTANDRIA MONOGYNIA.

Generic Character.—Calyx five-toothed. Petals five, distinct. Capsules compressed, obcordate, somewhat stipitate, two-celled, two-valved. (*G. Don.*)

Description, &c.—There is only one species in this genus. The name of Bursaria is from *bursa* a pouch or pocket, in allusion to the capsules, which bear some resemblance in form to a woman's pocket.

1.—BURSARIA SPINOSA *Cav.* THE SPINY BURSARIA.

Synonymes.—Itea spinosa *Andr.*; Cyrilla spinosa *Spreng.*
Engravings.—Bot. Rep., t. 314; and Bot. Mag., t. 1767, 68.

Specific Character.—Shrubby, much branched. Leaves oblong, cuneate, entire. Flowers disposed in terminal or lateral panicles.

Description, &c.—This very beautiful plant is a native of New Holland, whence it was introduced in 1809. It has a very fine effect in a conservatory, as it is an abundant flowerer, and is very showy when covered with its elegant little white blossoms. It should be grown in a mixture of sand and peat with a very little loam. It will grow with a very little protection in the open air.

GENUS V.

MARIANTHUS *Hügel.* THE MARIANTHUS.

Lin. Syst. PENTANDRIA MONOGYNIA.

Generic Character.—Sepals five, subulate, equal. Petals five, rather unequal, unguiculate, the claws channelled, conniving into a tube; limb spreading, recurved. Stamens five, rather declinate, at length diverging, shorter than the corolla, rather unequal in length. Filaments subulate, glabrous; anthers deeply sagittate, two-celled, emarginate at the base, fixed by the back, at length recurved; cells dehiscing longitudinally. Ovarium sessile, elongated, compressed. Ovulæ numerous, horizontal, in two series. Styles subulate; stigma obsoletely emarginate. Fruit capsular, elongated, compressed, terminated by the persistent style, two-celled. Seeds somewhat globular, or angular, smooth.

Description, &c.—The plants contained in this genus are all Australian. The flowers are very ornamental; but only one species has been introduced. The name of Marianthus is said to allude to the Virgin Mary, because white is dedicated to the Virgin, and the flowers of the first species that was discovered were of the purest white.

1.—MARIANTHUS CÆRULEO-PUNCTATUS *L. K. et O.*—THE BLUE-SPOTTED MARIANTHUS.

Synonyme.—Campylanthera elegans *Hort.*

Engravings.—Ladies' Mag. of Gard., Pl. 7; Bot. Mag., t. 3893; Paxton's Mag. of Bot., vol. viii., p. 247; and our *fig.* 1, in Pl. 9.

Specific Character.—Leaves entire, simple. Cymes many-flowered.

Description, &c.—A very ornamental climbing plant, common in the nurseries under the name of *Campylanthera elegans.* It is a greenhouse plant in this country, and it was first raised from seeds received in 1839 from the Swan River Settlement in Australia. It is also found on the Darling Mountains.

OTHER SPECIES OF MARIANTHUS.

M. CANDIDUS *Hügel.*

This plant, which is found among rocks at the Swan River, has white flowers arranged in long-stalked repeatedly di- or trichotomous terminal cymes. It does not appear to have been yet introduced into Great Britain.

M. PICTUS *Lindl.*

This plant has long, smooth, deep brown branches, which are very much divided, and oblong leaves, some of which are serrated, with terminal few-flowered cymes of white flowers striped with purple.

GENUS VI.

PRONAYA *Benth.* THE PRONAYA.

Lin. Syst. PENTANDRIA MONOGYNIA.

Generic Character.—Sepals five, acuminate. Petals five, sharply acuminate, spreading, sometimes unguiculate. Anthers free, linear, spirally curved. Ovarium oblong, hairy, two-celled, pulpy.

Description, &c.—Climbing shrubs, with oblong leaves, and terminal corymbose flowers. There are three species known of this genus, all of which are decidedly ornamental, but only one has been introduced. The name is given in honour of Baron Pronay, a Hungarian nobleman. The genus has also been called *Campylanthera* and *Spiranthera.*

1.—PRONAYA ELEGANS *Hügel*. THE ELEGANT PRONAYA.

Engravings.—Paxt. Mag. of Bot., vol. xii., p. 99; and our *fig.* 2, in Pl. 9.

Specific Character.—Suffruticose. Branches slender, twining. Leaves nearly sessile, alternate, oblong-linear; margins revolute, glabrous above, and covered with very adpressed hairs below. Peduncles short, terminal, solitary.

Description, &c.—An elegant little greenhouse plant, with close cymes of flowers, which continue expanding a long time. Its branches have somewhat of a twining habit, but it is a dwarf plant. Botanically, it is easily distinguished from the allied genera by its very curious stamens, the anthers of which are bent almost double. The best mode of training this plant, is twisting its branches round a pyramidal trellis. It should be grown in small pots, in sand, peat, and a little loam; if put into a large pot it generally withers at the root. It is a native of Australia, near the Swan River, and it was introduced about 1840.

OTHER SPECIES OF PRONAYA.

P. FRASERI *Benth.;* Syn. CAMPYLANTHERA FRASERI *Lindl.*

This species has very narrow leaves; and rather loose cymes of violet flowers on long peduncles.

P. SPECIOSA *Endl.*

This species has compound cymes above five inches in diameter of large pure white flowers. Neither of these species has been introduced.

CHAPTER IX.

TREMANDREÆ *R. Br.*

Essential Character.—Calyx of four or five unequal sepals, which are valvate when in the bud, and somewhat united at the base, deciduous. Petals equal in number with the sepals, and alternating with them; these are involute in the bud, enclosing the stamens, and much larger than the calyx, also deciduous. Stamens hypogynous, distinct, two in front of each petal, therefore, there are eight or ten in each flower; filaments erect; anthers inserted by the base, two to four-celled, bursting by a pore or tube at the apex. Ovary ovate, compressed, two-celled, each cell containing one to three ovulæ. Capsule ovate, compressed, two-celled, two-valved, bearing a dissepiment in the middle of each valve. Seeds pendulous, ovate, with a naked umbilicus, and terminated by a caruncle-like appendage, inserted at the apex of the dissepiment. Embyro cylindrical, straight, placed in the axis of a fleshy albumen, with the radicle pointing towards the umbilicus, not superior. (*G. Don.*)

Description, &c.—This is a very small order, consisting only of elegant little shrubs, natives of New Holland.

GENUS I.

TETRATHECA *Smith.* THE TETRATHECA.

Lin. Syst. OCTANDRIA MONOGYNIA.

Generic Character.—Calyx of four almost equal sepals. Petals four; stamens eight; anthers four-celled. Seeds generally solitary.

Description, &c.—The plants belonging to this genus are distinguished by their anthers having four cells, and by their stems being covered with glandular hairs.

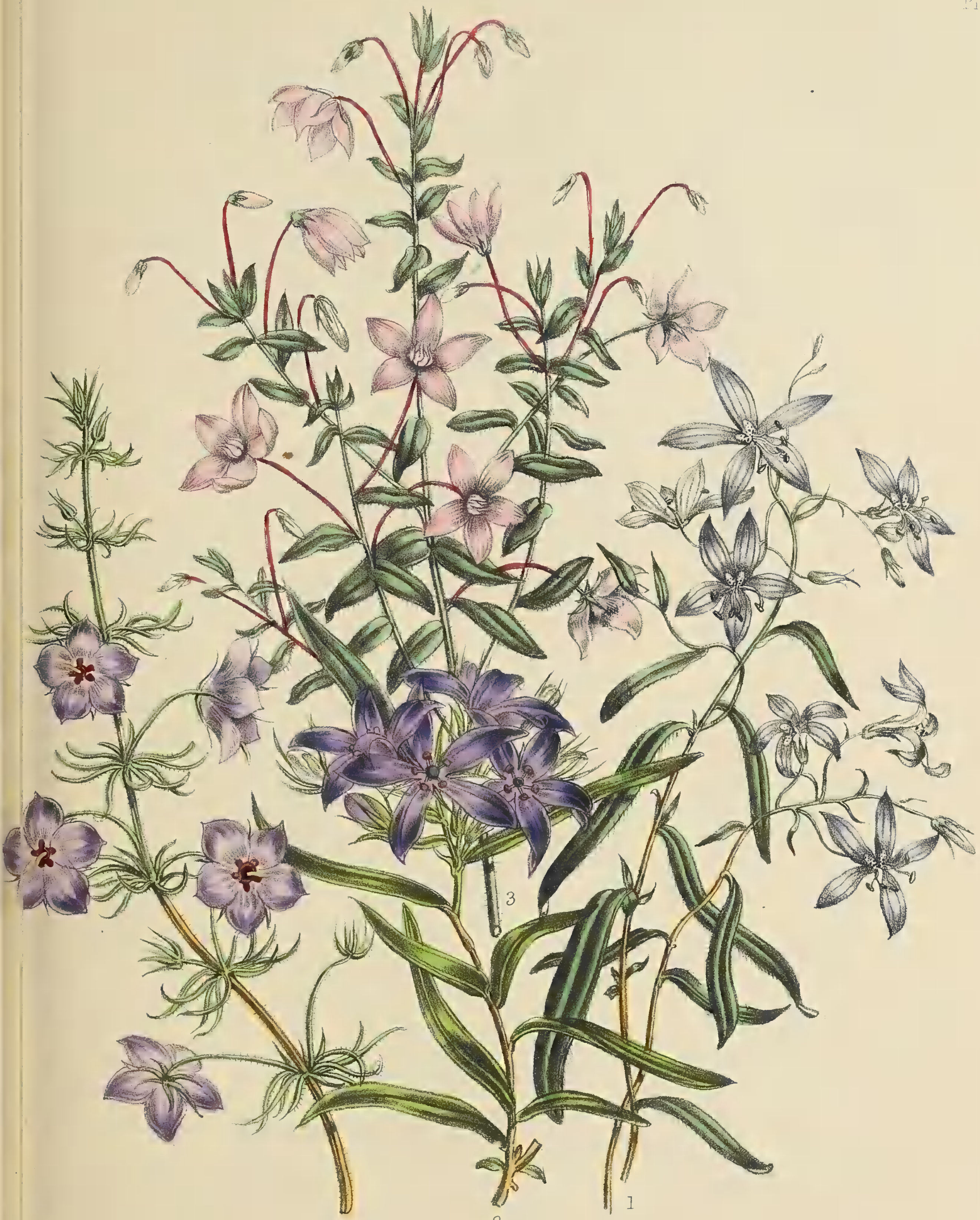
1.—TETRATHECA HIRSUTA *Lindl.* THE HAIRY TETRATHECA.

Synonyme.—Tremandra Hügelii. *Hort.*

Engravings.—Bot. Reg. for 1844, t. 67; Paxt. Mag. of Bot., vol. xiii. p. 53; and our *fig.* 3, in Pl. 9.

Specific Character.—Branches tomentose, sometimes bristly. Leaves oblong, distant or opposite, tomentose below, hairy above. Peduncles bristly or rough.

Description, &c.—A very pretty greenhouse plant with rose-coloured flowers, which are produced in great abundance. "It grows freely," says Dr. Lindley, "in a compost of peat, loam, and sand, in equal proportions,



1 *Marianthus cœruleo-punctatus.* 2 *Pronaya elegans.*
3 *Tetratheca hirsuta* 4 *Tetratheca verticillata*

and if a few potsherds are mixed with it so much the better. In summer plenty of air and water should be given, and shade in sunny weather." In winter very little fire heat is necessary; but it requires to be placed in an airy part of the greenhouse, as it is easily killed by damp. The plant was introduced from the Swan River Colony in 1843.

2.—TETRATHECA VERTICILLATA *Paxt.* THE WHORLED-LEAVED TETRATHECA.

Synonymes.—T. speciosa *Hort.*; Tremandra verticillata *Hügel.*
Engravings.—Paxt. Mag. of Bot., vol. xiii., p. 171; and our *fig.* 4, in Pl. 9.

Specific Character.—Pubescent. Leaves linear, whorled, acute, hairy. Flowers axillary, peduncled; segments of the calyx linear-lanceolate.

Description, &c.—This is probably the same plant as that described by Cunningham as *T. rubioides.* The flowers not only differ in colour from those of *T. hirsuta,* but they do not close in the absence of the sun, as is the case with that species. The plant is easily grown in light sandy soil; but it requires ample drainage. It was raised by Mr. Low of Clapton from seeds gathered by Drummond in New South Wales, and sent home in 1843.

OTHER SPECIES OF TETRATHECA.

T. JUNCEA *Smith.*

A plant with reed-like branches and two-edged stems, which are almost naked, the leaves being very few and lanceolate. The flowers are generally white. It was introduced in 1803.

T. GLANDULOSA *Labill.*

This species bears considerable resemblance to *T. hirsuta,* but the flowers are larger, and purple. It was introduced in 1822.

T. ERICÆFOLIA *Smith.*

A heath-like plant, the flowers of which are rose-colour or white, and somewhat drooping. It was introduced in 1820.

T. THYMIFOLIA *Smith.*

This species is nearly allied to the last, but the flowers are purple. It was introduced in 1824.

T. RUBIOIDES *Cunn.*

This species is very nearly allied to the last, but the branches are hoary, and the flowers, which are purple, are decidedly drooping. It was introduced in 1825.

The last three species are all low shrubs, from half a foot to a foot high, and bear so much resemblance to each other, that they will probably prove to be varieties of the same species. All the species of this genus are rather difficult to preserve, as they are easily killed by damp; and they are also difficult to procure, as when the seeds are sent home, they very often do not vegetate.

GENUS II.

TREMANDRA *R. Br.* THE TREMANDRA.

Lin. Syst. DECANDRIA MONOGYNIA.

Generic Character.—Calyx of five sepals. Petals five. Stamens ten. Anthers two-celled. (*G. Don.*)

Description, &c.—The plants belonging to this genus are shrubs, with the habit of Helianthemum, but beset with starry hairs. Only two species are described in books, and it does not appear that either of them have been introduced. The name of Tremandra alludes to the anthers being so slightly fixed to the points of the filaments as to shake with the slightest movement.

CHAPTER X.

SARRACENIEÆ *Turp.*

Essential Character.—Calyx of five permanent sepals, which are concave at the base and furnished with a three-leaved involucrum just under it. Corolla of five petals, which are contracted at the base, and unguiculate. Stamens numerous, hypogynous, closely packed together; filaments shortish; anthers fixed by their back, oblong, two-celled, opening upwards from the base, hardly to the apex. Ovary one, large, globose, with five longitudinal furrows. Style columnar, crowned by a broad, convex, leafy, five-angled stigma. Capsule globose, crowned by the permanent style and stigma, five-lobed, five-celled, five-valved, many-seeded, valves separating from the apex. Placentas five, one in each cell closely covered with seeds, progressing from the central axis. Seeds small, minutely tubercled. Embryo cylindrical, cleft at one extremity into two cotyledons, placed at the base of a copious waxy granular albumen, with the radicle pointing towards the hilum. The seeds are keeled on their underside, inserted by their narrowest point upon a large club-shaped stipitate receptacle, which stands out from the central column or axis into the middle of each cell. The valves of the capsule open from above between the cells, whose dissepiments are attached to the centre of each valve, and separate from the central axis of the column. (*G. Don.*)

Description, &c.—The plants belonging to this order are all contained in one genus, and are natives of the swamps of North America; and singularly enough, though several of them are found in Canada, they will not stand in the open air in Great Britain. They are all remarkable for the singular form of their leaves, which are tubular, and hold water. The flowers are large and handsome, and they are remarkable for the very singular shape of the stigma, which bears some resemblance to a pillion or side-saddle.

GENUS I.

SARRACENIA *Tourn.* THE SIDE-SADDLE FLOWER.

Lin. Syst. POLYANDRIA MONOGYNIA.

Generic Character.—As there is only one genus in the order, there is no distinct generic character.

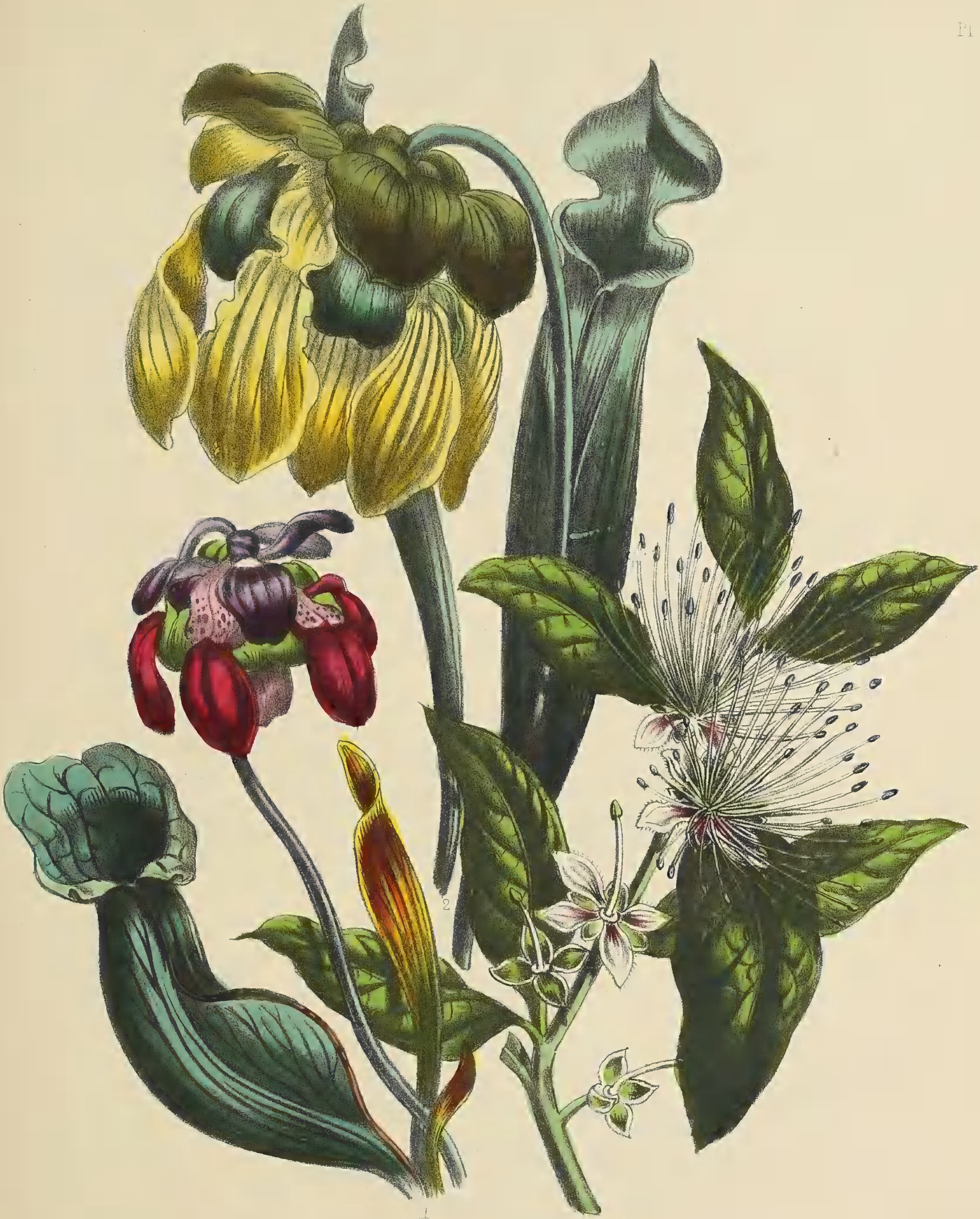
Description, &c.—The plants belonging to this genus are ornamental, but very singular; and as already, observed, they require artificial heat to keep them alive in England during winter. They also require to be grown in soil kept constantly moist, as they are marsh plants in their native country. The name of Sarracenia was given to the genus by Tournefort, in honour of Dr. Sarrazin, a French physician residing at Quebec, who first discovered *Sarracenia purpurea.*

1.—SARRACENIA PURPUREA *Lin.* THE PURPLE SIDE-SADDLE FLOWER.

Engravings.—Bot. Mag., t. 849; Lodd. Bot. Cab., t. 308; and our *fig.* 1, in Pl. 10.

Specific Character.—Leaves short, constricted at top, with the tube inflated and gibbous, and the lid or wing or helmet-like appendage erect, broad-cordate, and sometimes emarginate. (*G. Don.*)

Description, &c.—This very handsome plant is a native of Canada, but it will not flower in this country without artificial heat. It should be kept in a warm situation in a greenhouse, and planted in a large pot in bog earth, which should be kept moist, and covered with moss to prevent evaporation. The plant was introduced in 1640, and it flowers in March.



1 Sarracenia purpurea 2 Sarracenia flava 3 Capparis acuminata

2.—SARRACENIA FLAVA *Lin.* THE YELLOW SIDE-SADDLE FLOWER.

Engravings.—Bot. Mag., t. 780; Lodd. Bot. Cab., t. 1957; and our *fig.* 2, in Pl. 10.

Specific Character.—Leaves straight, very long, funnel-shaped, with a spreading throat; appendage erect, constricted at the base, with the sides and the lower part bent backwards, and ending in an awl-shaped mucrone. (*G. Don.*)

Description, &c.—This is the tallest growing of all the species, the leaves being often upwards of two feet long. The flower, however, is not so handsome as that of *S. purpurea*, as the petals are long and flaccid, and not of a bright yellow. The leaves seldom contain water, but are generally half filled with flies. This species requires the same treatment as the last; or it may be placed in a pot which is kept constantly up to the rim in water. Some gardeners assert, that the best way of keeping both species is to place them in a stove till they have formed their flower-buds, and then to let them flower in the open air. According to this system, as soon as they have done flowering, they are again placed in heat. The Yellow Side-saddle Flower was introduced in 1752.

3.—SARRACENIA RUBRA *Walt.* THE RED SIDE-SADDLE FLOWER.

Engravings.—Bot. Mag., t. 3515; Lodd. Bot. Cab., t. 1163.

Specific Character.—Leaves short, coloured in the upper part with netted veins; tube of the leaf ending in a somewhat arched, long, pointed appendage.

Description, &c.—This species, which is perhaps the most beautiful, is a native of the swamps of Georgia and Florida. The flowers are of a rich dark crimson, and the leaves are curiously marked with dark crimson veins, the upper part being drawn out into a point. This species is extremely difficult to cultivate, and though it has been frequently introduced, it is generally soon lost. It is likewise very difficult to throw it into flower.

OTHER SPECIES OF SARRACENIA.

S. PSITTACINA *Michx.*

This species is very frequently confounded with *S. rubra*, but it is said to be much more beautiful; and, as the involucrum is of a bright orange, the petals are scarlet, and the broad stigma is of a dark green, its specific name, which signifies a parrot, does not seem to be misapplied. It is a native of Florida, and it is uncertain whether it has been introduced.

S. VARIOLARIS *Michx.*; Bot. Mag., t. 1710; Lodd. Bot. Cab., t. 803. Syn. S. ADUNCA.

The flowers of this species are of a greenish yellow, and consequently they possess no beauty; but the leaves are curious, partly from being hooked at the point, and partly from their being spotted towards the upper part with transparent spots, which have a very singular appearance. The flowers are small, and the petals are spreading instead of hanging down as in all the other species.

S. MINOR *Nutt.*

This species is often confused with *S. variolaris*, but it is very different. The flowers and leaves are both smaller than in any other species of the genus. The leaves are very little inflated, and they are streaked longitudinally with dark purple lines, and the dilated stigma is more faintly veined with the same colour. The petals are purple on the outside and green within, but the whole plant is more curious than beautiful. It is a native of Georgia, whence it was introduced in 1830.

CHAPTER XI.

CAPPARIDEÆ *Juss.*

Essential Character.—Parts of flower usually imbricate in the bud. Sepals four, seldom more, sometimes almost free, equal or unequal, sometimes connected at the base into a tube with a variable limb. Petals four, seldom more, cruciate, usually unguiculated and unequal. Stamens almost perigynous, inserted at the bottom of the calyx, rarely tetradynamous, usually disposed in a quaternary order, definite or indefinite. Torus hemispherical or elongated, usually bearing glands. Stipe of ovary slender, rising from the torus; the ovary is, therefore, stipitate. Ovary composed of two or more closely-joined carpels. Style none or filiform. Fruit variable, siliquose, or baccate, one-celled, but rarely one-seeded, usually with two or more many-seeded placentas; in the dehiscent fruit these are intervalvular. Seeds usually kidney-shaped, without albumen. Embryo incurved. Cotyledons leafy, flat, somewhat incumbent. (*G. Don.*)

Description, &c.—The plants belonging to this order are characterised by the peculiarity of the seed-vessels growing from a long stalk in the centre of the flower. The flowers are all ornamental, and are remarkable for the number and length of their stamens, which are much more conspicuous than the petals. The only genus which contains greenhouse plants is the Caper.

GENUS I.

CAPPARIS *Lin.* THE CAPER.

Lin. Syst. POLYANDRIA MONOGYNIA.

Generic Character.—Calyx four-parted. Petals four. Torus small. Stalk of the fruit slender. Stamens indefinite. Siliques somewhat baccate, stipitate. (*G. Don.*)

Description, &c.—The plants belonging to this genus are divided into four sections, the first of which contains all the greenhouse plants belonging to the genus which are common in Great Britain.

1.—CAPPARIS SPINOSA *Lin.* THE COMMON CAPER.

Engraving.—Bot. Mag., t. 291.

Specific Character.—Stipules spinose, hooked. Leaves ovate, roundish, deciduous. Pedicels solitary, one-flowered. (*G. Don.*)

Description, &c.—This plant is well known from the use made of the flower-buds, which are pickled with salt and vinegar, and used for making sauce, as their taste, though slightly bitter and acrid, is aromatic. The plant is a low shrub, growing wild on the south coast of France, and in Italy and Sicily on the shores of the Mediterranean. The flower-buds are gathered when quite young, and the shrub continues to produce them for six months in the year. In this country it is generally considered a greenhouse plant, but it has been known to grow in the open air, and a plant of it stood for nearly a century against a wall in the garden of Camden House, Kensington, and which produced flowers annually. This plant was killed in the severe winter of 1838—9, and a portion of its root is now in my possession, having been given to my late husband by Miss Teed, the present occupier of that mansion. The petals of the flowers are white, but the filaments of the stamens and the footstalks of the flowers are red.

2.—CAPPARIS ACUMINATA *Lindl.* THE TAPER-LEAVED CAPER.

Engravings.—Bot. Reg., t. 1320; and our *fig.* 3, in Pl. 10.

Specific Character.—Stipules spinose, hooked at the top; leaves ovate, mucronately acuminated, rusty-tomentose on the under surface; pedicels two to three together. (*G. Don.*)

Description, &c.—This is a very ornamental species, but it is more tender than the other kinds. It is a native of China, whence it was introduced in 1820. The leaves are long and tapering at the point, and they are without the hooked stipules which distinguish *C. spinosa.* The flowers have small petals, which are white, each having a pink spot at the base. The stamens are very long and white, with blue anthers.

OTHER SPECIES OF CAPPARIS.

C. RUPESTRIS *Sibth.* et *Smith.* THE ROCK CAPER TREE.

This species is a native of Crete, where it grows on rocks by the sea side. The flowers are large, with white petals and numerous stamens, which have red filaments and yellow anthers, like those of *C. spinosa.* The leaves, however, are rounder and more fleshy, and they are destitute of the hooked stipules. This plant also requires a greenhouse in England

CHAPTER XII.

BYTTNERIACEÆ *Brown.*

Essential Character.—Calyx sometimes naked, sometimes girded by an involucre. Sepals more or less connected at the base, constantly valvate in æstivation. Petals five, hypogynous, alternating with the sepals, convolute in æstivation, of various forms, rarely unequal or wanting. Stamens equal in number to the sepals or petals, or double, triple, or multiple that number; filaments monadelphous, or variously divided at the top, some of them are sometimes sterile; anthers two-celled. Carpels four or five, distinct, or joined into one ovary, and crowned by as many distinct or connected styles.

Description, &c.—In this order, including Sterculiaceæ, are many very interesting plants, one of the most important of which is the Theobroma, from which cacao, or cocoa, and chocolate are made. The Adansonia, or Baobab Tree, which is said to be the largest plant in the world, and the curious Hand Plant, also belong to this order. The trees belonging to the genus Sterculia have very handsome foliage, but the greenhouse species have not very ornamental flowers.

GENUS I.

REEVESIA *Lindl.* THE REEVESIA.

Lin. Syst. MONADELPHIA DODECANDRIA.

Generic Character.—Calyx campanulate, five-toothed, imbricate in æstivation, tomentose. Petals five, unguiculate, convolute in æstivation. Stamens joined into a long filiform tube. Anthers fifteen, sessile, collected into a little head, two-celled, bursting lengthwise. Ovary sessile, within the antheriferous head. Capsule stipitate, woody, obovate, five-angled, five-celled, five-valved, without any central axis. Seeds two in each cell, winged at the base. (*G. Don.*)

Description, &c.—There is only one species in this genus, which is named in honour of John Reeves, Esq., an eminent botanist, who was long resident in China.

1.—REEVESIA THYRSOIDEA *Lindl.* THE THYRSE-FLOWERED REEVESIA.

Engravings.—Bot. Reg., t. 1236; and our *fig.* 1, in Pl. 11.

Specific Character.—Leaves alternate, exstipulate, lanceolate, acuminated, entire; petioles articulated. Flowers in compound, terminal, or axillary racemes.

Description, &c.—This species is an evergreen tree, a native of China, with white flowers, and smooth green leaves. It was introduced in 1824. It should be planted in a conservatory, as it is too large for a pot. It flowers in January.

GENUS II.

RULINGIA *R. Br.* THE RULINGIA.

Lin. Syst. PENTANDRIA PENTAGYNIA.

Generic Character.—Petals five, concave at the base, and ligulate. Sterile stamens five, undivided. Ovarium five-celled, cells two-seeded.

Description, &c.—The species belonging to this genus are natives of New Holland, near Port Jackson. They are very nearly allied to Commersonia, a genus of stove plants. The genus is named in honour of John Philip Ruling, Esq., author of an "Essay on the Natural Orders."

1.—RULINGIA DASYPHYLLA *R. Br.* THE HAIRY-LEAVED RULINGIA.

Synonymes.—Commersonia dasyphylla *Andr.*; Byttneria dasyphylla *Gay.*; Lasiopetalum dasyphyllum *Cels.*

Engraving.—Bot. Rep., t. 603.

Specific Character.—Leaves ovate, lanceolate, unequally serrated, hairy on both surfaces. Mucrones of the petals exceeding the calyx. (*G. Don.*)

Description, &c.—This species is a low branching shrub, a native of New Holland and Van Diemen's Land, whence it was introduced in 1780. It grows freely in a conservatory in this country, and is ornamental from the rich brown hairs which cover the leaves, and the abundance of its terminal columns of flowers. These flowers are of a brilliant white, and though they are very small when examined individually, they are exceedingly ornamental from their great abundance, and they are valuable from being produced in early spring when few plants are in flower. These flowers are remarkable for their strong smell of cucumber, which they do not lose even when they are dried.

OTHER SPECIES OF RULINGIA.

R. PANNOSA *R. Br.*; Bot. Mag., t. 2191.

The leaves of this species are clothed with white tomentum, and the flowers are white; but as they are produced in very small clusters, the plant is not at all ornamental. It was introduced in 1800.

R. HERMANNIÆFOLIA *Dec.*

A native of New Holland; introduced in 1823.

GENUS III.

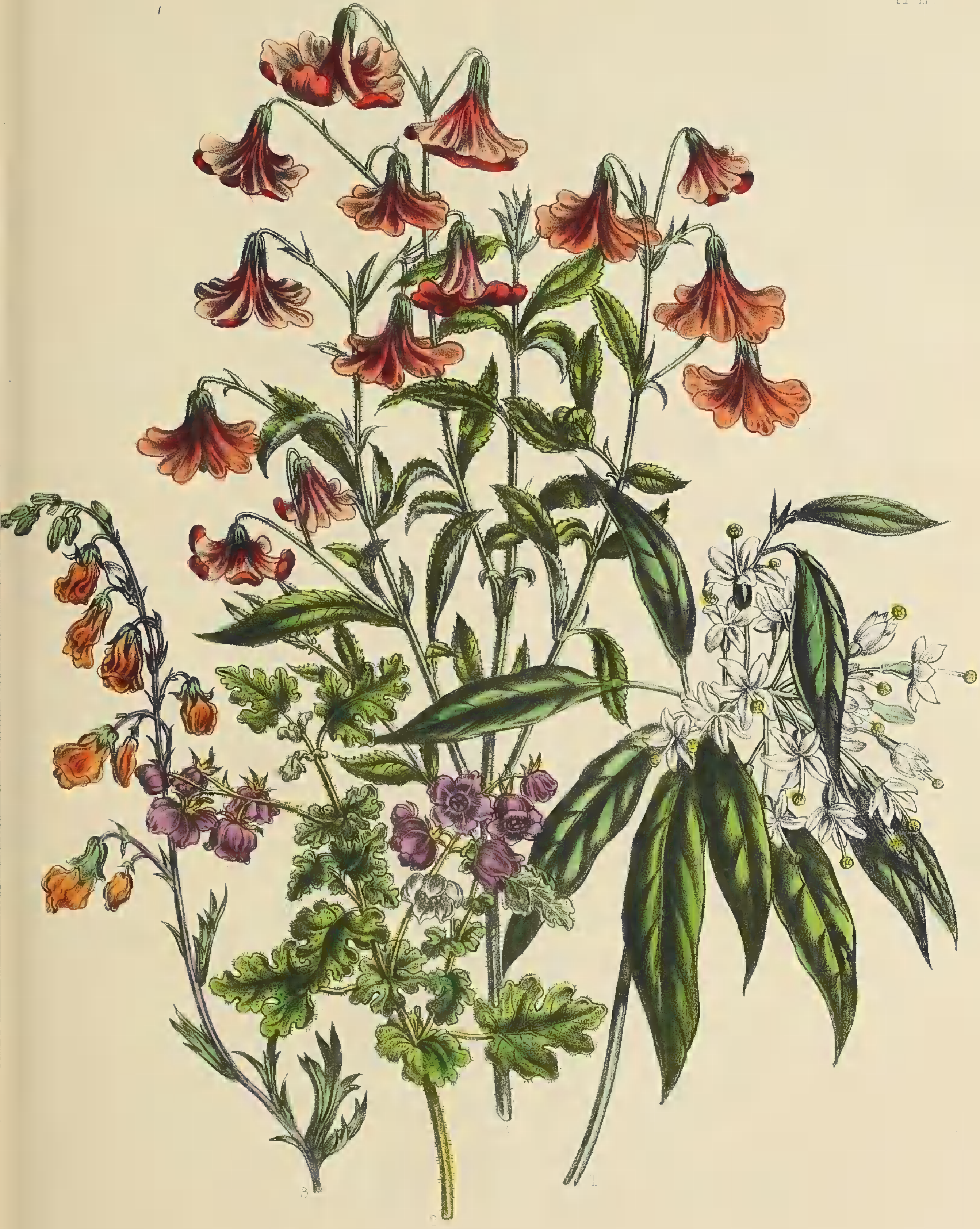
LASIOPETALUM *Smith.* THE LASIOPETALUM.

Lin. Syst. PENTANDRIA MONOGYNIA.

Generic Character.—Calyx permanent. Petals five. Filaments five, free, or connate at the base. Ovary one or three-celled, cells containing two or more ovules. Capsules three-valved.

Description, &c.—These are very ornamental plants, all natives of New Holland. The genus has been divided into four genera; but as the plants are generally found under their old names in the nurseries, I have not thought it necessary to divide them here. The name of Lasiopetalum is from two Greek words signifying woolly-petaled, in allusion to the calyx being woolly.

Pl. 11.



1 *Reevesia thyrsoidea* 2 *Dasiopetalum quercifolium*
3 *Hermanniä flammea* 4 *Mahernia grandiflora*

1.—LASIOPETALUM QUERCIFOLIUM *Andr.* THE OAK-LEAVED LASIOPETALUM.

Synonyme.—Thomasia quercifolia *Gay.*

Engravings.—Bot. Rep., t. 459; Bot. Mag., t. 1485; and our *fig.* 2, in Pl. 11.

Specific Character.—Pubescent. Leaves alternate, three or five-lobed; lobes obtusely sinuated; stipules opposite, three-lobed, petiolate. Calyx coloured, five-cleft, rotate, campanulate. Bracts three, linear, reflexed, nearly as long as the calyx.

Description, &c.—A very handsome though a very singular plant, which has a remarkably rich appearance from the dark brown woolly hair which covers it on every part. The leaves are shaped like those of the oak; and the flowers, which are of a deep rose-colour, are very pretty. The plant is a native of New South Wales, whence it was introduced in 1803, and it is now very common in collections.

2.—LASIOPETALUM SOLANACEUM *Sims.* THE POTATO-LEAVED LASIOPETALUM.

Synonymes.—L. triphyllum *Smith*; Thomasia solanacea *Gay.*

Engraving.—Bot. Mag., t. 1486.

Specific Character.—Petals five. Leaves sinuate, lobed, hairy. (*G. Don.*)

Description, &c.—This species is a native of the south-west coast of New Holland. The flowers are white, and very curious; and the leaves are generally bordered by a yellowish stripe, which forms a decided margin to them, the leaf-like stipules having the same peculiarity. The whole forms a pretty and curious shrub, growing from two feet or more high, and requiring the protection of a greenhouse. The flowers are produced from May to July. The species was introduced in 1803.

OTHER SPECIES OF LASIOPETALUM.

L. PURPUREUM *Ait.*; Bot. Mag., t. 1755.

This is a pretty little decumbent shrub, producing abundance of small purple flowers from April or May till September or October. It is a native of New Holland; introduced in 1803. It should be grown in sandy peat, with a very small quantity of loam, and the pot in which it grows should be placed on a high shelf, so that the decumbent branches may hang down.

L. FERRUGINEUM *Smith*; Bot. Mag., t. 1766.

This is one of the two plants still left by modern botanists in the genus *Lasiopetalum.* It is covered in every part with rusty tomentum, and the calyx, which constitutes the principal part of the flower, is green. It was introduced in 1791.

There are several other species, but they do not possess any beauty.

GENUS IV.

HERMANNIA *Lin.* THE HERMANNIA.

Lin. Syst. MONADELPHIA PENTANDRIA.

Generic Character.—Calyx almost naked, campanulate, five-cleft. Petals five. Stamens five. Filaments lanceolate, usually winged, monadelphous at the very base. Styles five, joined into one. Capsules five-celled, five-valved; cells many-seeded. (*G. Don.*)

Description, &c.—The species belonging to this genus are all natives of the Cape of Good Hope. They are shrubs, generally covered with star-like hairs, and though their flowers are small, they are generally brilliantly coloured. There are nearly fifty species, but I shall only give a few of the most ornamental.

1.—HERMANNIA ALTHÆIFOLIA *Lin.* THE MARSH MALLOW-LEAVED HERMANNIA.

Synonymes.—H. aurea *Jacq.*; H. capensis *Pet.*; Ketmia africana *Com.*

Engraving.—Bot. Mag., t. 307.

Specific Character.—Leaves tomentose, obovate, plaited, crenate; stipules ovate-lanceolate, three or five-nerved. Peduncles solitary or twin, two or three-flowered, longer than the leaves. (*G. Don.*)

Description, &c.—This species is a plant of free growth, which continues to produce its deep orange-coloured flowers nearly all the summer. The flowers are pretty in themselves, but the plant is not particularly ornamental on account of its leaves, which have a somewhat weedy appearance. It was introduced from the Cape of Good Hope in 1728. When planted in the free soil of a conservatory, it forms a bush three or four feet high.

2.—HERMANNIA FLAMMEA *Jacq.* THE FLAME-COLOURED HERMANNIA.

Engravings.—Bot. Mag., t. 1349; Bot. Rep., t. 550; and our *fig.* 3, in Pl. 11.

Specific Character.—Leaves smooth, wedge-shaped, lanceolate, truncated, and toothed at the apex. Racemes terminal. Peduncles one or two-flowered. Calyx somewhat reflexed. (*G. Don.*)

Description, &c.—A very pretty little shrub, with curious wedge-shaped leaves, and weak branches. The flowers are drooping, and grow all on one side of the stem. The petals are of a brilliant scarlet on the outside, and yellow within; they are very curiously twisted together, and are very seldom seen completely expanded. The species is a native of the Cape of Good Hope, whence it was introduced in 1794. The flowers are very odoriferous after sunset, but they have no fragrance in the daytime. They appear in succession during the whole of the season.

OTHER SPECIES OF HERMANNIA.

H. TENUIFOLIA *Sims*; Bot. Mag., t. 1348.

This is a very pretty little plant, with very slender leaves, and bright yellow flowers. Like the other species it is a native of the Cape of Good Hope, whence it was introduced early in the present century.

H. ALNIFOLIA *Lin.*; Bot. Mag., t. 299.

A pretty little plant, with bright yellow flowers.

H. LAVANDULÆFOLIA *Lin.*; Bot. Mag., t. 304.

A plant with small yellow flowers, and very glaucous leaves.

All the species grow freely in any light rich soil, and they all are very free flowerers, continuing to produce a succession of blossoms nearly all the summer months.

GENUS V.

MAHERNIA *Lin.* THE MAHERNIA.

Lin. Syst. MONADELPHIA PENTANDRIA.

Generic Character.—Calyx naked, campanulate, five-cleft. Petals five, with an obcordate limb, spirally twisted, and straightish claws. Filaments five, monadelphous at the base, dilated into a cordate tubercle, or a cup-formed process in the middle. Styles five, sometimes joined into one. Capsules five-celled, five-valved, many-seeded. (*G. Don.*)

Description, &c.—The species included in this genus are not half so numerous as those included in Hermannia, from which they have been separated. The Mahernias are small shrubs with toothed or pinnatifid leaves, and red or yellow flowers. They are all natives of the Cape of Good Hope. The word Mahernia is an anagram of Hermannia.

1.—MAHERNIA GRANDIFLORA *Burch.* THE LARGE-FLOWERED MAHERNIA.

Synonyme.—Hermannia grandiflora *Ait.*

Engravings.—Bot. Reg., t. 224; and our *fig.* 4, in Pl. 11.

Specific Character.—Leaves lanceolate, cuneated, obtuse, serrately toothed, white beneath. Peduncles usually two-flowered, divaricated, and clammy.

Description, &c.—This is by far the handsomest species of the genus. It was found by Mr. Burchell, the African traveller, covering vast plains in the neighbourhood of the Cape of Good Hope. Its flowers are campanulate and drooping, and they are produced in the greatest abundance. The plant itself seldom exceeds two feet in height, but its branches are widely spreading. Mr. Burchell found this plant in 1812, and brought it with him to England; but it had been previously introduced and lost in 1791

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OTHER SPECIES OF MAHERNIA.

M. ODORATA *Andr.*; Bot. Rep., t. 85.

The flowers of this species are rather large. They are drooping and yellow, with a scent like that of the Jonquil. The plant was introduced in 1789.

M. INCISA *Jacq.*; Bot. Mag., t. 353.

The flowers of this species, when in the bud; are of a deep crimson, but as they open, they show the deep orange-colour of their centre, and finally become of a pale yellow.

M. DIFFUSA *Jacq.*; Lodd. Bot. Cab., t. 187.

The flowers of this species are drooping, and of a fine rose-colour, which is very deep in the bud, but becomes paler as the flowers open. It was introduced in 1774.

There are several other species of Mahernia, but they are very seldom seen in British greenhouses.

CHAPTER XIII.

TERNSTRŒMIACEÆ *Dec.*

Essential Character.—Calyx of three to five unequal, concave, coriaceous, obtuse, permanent, imbricate sepals, usually furnished with two bracteoles at the base. Petals usually five, rarely more or fewer, inserted on the disk, sometimes free, sometimes connected at the base. Stamens numerous, hypogynous, somewhat adnate to the petals at the base, free or connate, rarely disposed in bundles; filaments short, awl-shaped; anthers erect, two or four-celled, adnate or versatile. Ovary ovate. Styles two to seven, free, or more or less joined together. Fruit ovate-globose, radiately divided on the inside into as many cells as there are styles or stigmas, sometimes dry-baccate, indehiscent, sometimes capsular, dehiscent. Seeds few or numerous, fixed to the central placenta, sometimes arched, sometimes roundish or compressed. Albumen fleshy or wanting. Embryo arched or straight, slender, terete, with oblong cotyledons, and an inconspicuous plumule, with a long radicle, which is turned to the hilum. (*G. Don.*)

Description, &c.—The plants belonging to this order are all very ornamental, and most of them are stove shrubs or trees. A few of the genera contain greenhouse plants; and of these, the best known are those containing the Camellia and the Tea.
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GENUS I.

GORDONIA *Ellis.* THE GORDONIA.

Lin. Syst. MONADELPHIA POLYANDRIA.

Generic Character.—Calyx of five rounded coriaceous sepals. Petals five, somewhat adnate to the urceolus of the stamens. Style crowned by a peltate five-lobed stigma. Capsules five-celled, five-valved; cells two to four-seeded. Seeds ending in a leafy wing, fixed to the central column, filiform. (*G. Don.*)

Description, &c.—There are only two species of this genus in British greenhouses, but they are both very ornamental. They are both natives of the southern part of North America.

1.—GORDONIA LASIANTHUS *Lin.* THE LOBLOLLY-BAY.

Synonymes.—Hypericum lasianthus *Cates.*; Acea floridana *Pluk.*
Engraving.—Bot. Mag., t. 668.
Specific Character.—Pedicels axillary, usually shorter than the leaves. Leaves oblong, coriaceous, smooth, serrated. Calyx silky. Capsules conoid, acuminated. (*G. Don.*)

Description, &c.—The Loblolly Bay is a native of South Carolina, where it grows in wet swamps. In England it requires a conservatory, where, if the roots are kept properly moist, it will form a beautiful evergreen tree fourteen feet high. The flowers are extremely beautiful from the brilliant white of the petals, which are of a solid fleshy substance, and are covered externally with a silky down. The plant was introduced in 1769.

2.—GORDONIA PUBESCENS *Pursh.* THE PUBESCENT GORDONIA.

Synonymes.—G. Franklini *L'Her.*; Lacathea florida *Sal.*; Franklinia Alatamaha *Marsh.*
Specific Character.—Flowers almost sessile. Leaves obovate-lanceolate, pubescent beneath, somewhat serrated, membranaceous. Petals and sepals rather silky on the outside. Capsules spherical. (*G. Don.*)

Description, &c.—This is a most beautiful tree, which will grow to the height of twenty feet. The flowers, which are produced in August and September, are large and white, with golden yellow anthers, and are delightfully fragrant. The species was introduced in 1774; and it is a native of the banks of the river Alatamaha in Georgia, North America.

GENUS II.

POLYSPORA *Sweet.* THE POLYSPORA.

Lin. Syst. MONADELPHIA POLYANDRIA.

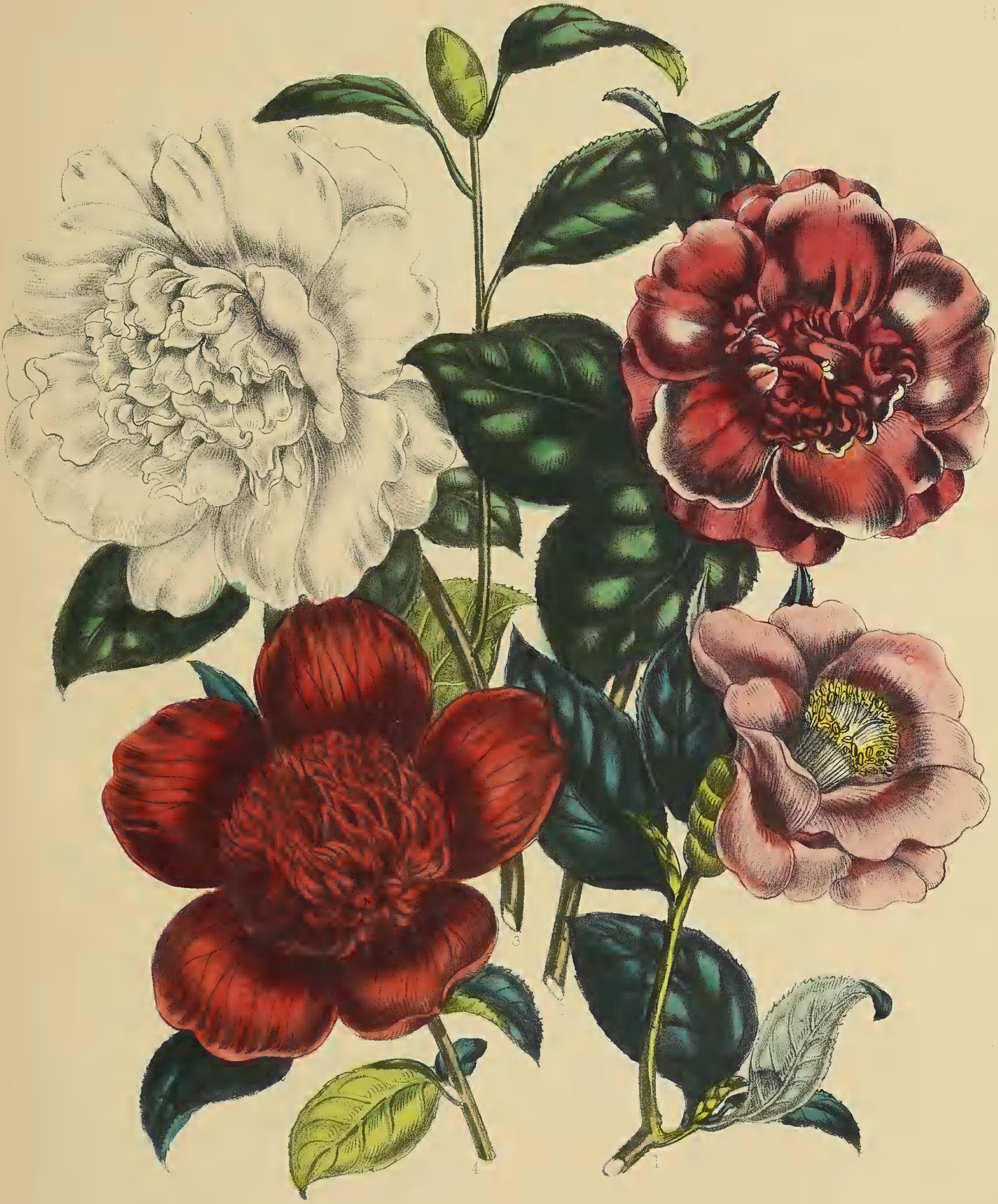
Generic Character.—Calyx girded by accessory bracteas. Sepals and petals five. Stamens numerous, monadelphous at the base. Style crowned by a four or five-lobed stigma. Capsule conical, five-celled, five-valved, many-seeded. Seeds imbricate, ending in a wing (*G. Don.*)

Description, &c.—There is only one species in this genus, which is divided from Camellia. The name of Polyspora is from two Greek words signifying many-seeded.

1.—POLYSPORA AXILLARIS *Sweet.* THE AXILLARY-FLOWERED POLYSPORA.

Synonymes.—Camellia axillaris *Roxb.*; Gordonia anomala *Spreng.*
Engravings.—Bot. Reg., t. 349; and Bot. Mag., t. 2047.
Specific Character.—Leaves smooth, obovate, entire. Flowers axillary, solitary, almost sessile.

Description, &c.—A very beautiful plant, with flowers of a yellowish white, and nearly the size of the common single red Camellia. The plant requires heat to throw it into flower; the flowers appearing from November to March. It is a native of Pulo-Penang, and was introduced in 1816. It forms a shrub about three feet high.



1 *Camellia japonica* 2 *Camellia j. Chandleri.*
3 *Camellia j. pomponia* 4 *Camellia j. crassinervis.*

GENUS III.

CAMELLIA *Lin.* THE CAMELLIA.

Lin. Syst. MONADELPHIA POLYANDRIA.

Generic Character.—Calyx imbricate, surrounded by accessory bracteas or sepals. Stamens monadelphous. Anthers elliptical, two-celled, bursting lengthwise. Capsule furrowed, with a dissepiment in the middle of each valve, separating from the free triquetrous axis when ripe. Cells one or two-seeded. (*G. Don.*)

Description, &c.—The Camellias, as is well known, are evergreen shrubs with dark green shining leathery leaves, and large flowers resembling a rose. Most of the kinds common in British greenhouses are varieties of one species, *Camellia japonica*. The name of this genus was given in honour of Father Kamel, a Moravian Jesuit who travelled in China, and whose name in Latin becomes Camellus.

1.—CAMELLIA JAPONICA *Lin.* THE COMMON CAMELLIA, OR JAPAN ROSE.

Synonymes.—Rosa sinensis *Thunb.*; Thea rosea *Pet.*; Tsubaki *Kæmp.*

Engravings.—Bot. Mag., t. 42; and our *fig.* 1, in Pl. 12.

Specific Character.—Leaves ovate, acuminate, acutely serrated. Flowers axillary, sessile, usually solitary. Ovary smooth. (*G. Don.*)

Description, &c.—The *Camellia japonica* was first brought to England in the year 1739, and it was introduced by Robert Lord Petre, a great patron of botany of those days. When the Camellia was first received by this nobleman, he had it placed in his hothouse at Thorndon Hall, in Essex, fancying, as it was a native of Japan, that it would require a considerable degree of heat in this country. Notwithstanding, however, that this stove had great advantages (for it was not only of very considerable size, but contained beds of earth like a conservatory), the heat was too great for the Camellias, and the two that Lord Petre had imported, died. The single red was re-imported in 1792, and being placed in a greenhouse, flowered beautifully. As Thunberg, in his *Flora Japonica*, had spoken copiously of this plant, which he described as a large and tall tree, and mentioned that it had a great many varieties in the groves and gardens of Japan, the attention of collectors was directed towards them, and a gentleman connected with the India House (John Slater, Esq.), procured the double white and variegated red from China. These plants were brought home in the year 1793, by Captain Connor, in the Carnatic East Indiaman. Thunberg's assertion respecting the large size of the Camellia in its natural state, is corroborated by Mr. Fortune, who met with several specimens of the single red variety, twenty or thirty feet in height, with stems thick in proportion, growing wild in the woods of Poo-to-san in China.

The success which attended the importation of these plants, induced persons fond of gardening to procure others; and the next that was imported was the double red, which was procured by Sir Robert Preston, of Valleyfield, in Perthshire. From this time an immense number of Camellias have been brought from China, among the most beautiful of which may be mentioned the Waratah, or Anemone-flowered Camellia, *C. j. anemoneflora* (see *fig.* 4, in Pl. 12), and the fringed white, *C. j. fimbriata*. *C. j. Welbankii*, and *C. j. pomponia* (see *fig.* 3, in Pl. 12), were introduced by Captain Welbank. The single white was not introduced till 1818. In addition to the varieties of Camellia imported from China, several very beautiful ones have been originated in this country, as examples of which may be mentioned *C. j. Chandleri* (see *fig.* 2, in Pl. 12), *C. j. corallina*, *C. j. punctata*, and *C. j. Pressii*. All the varieties of *Camellia japonica* are very nearly hardy, particularly the single red. They should be grown in light loam, or loam and peat. The pots should be half-filled with pieces of potsherds, in order that the roots may not get soddened with water, "as nothing injures them more than over-watering, particularly when they are not in a growing state." When the plants are growing freely, they can scarcely have too much water, and they should be sprinkled over the leaves with a fine-rosed watering-pot. Camellias are propagated by cuttings, layers, grafting, and inarching, and the single red is generally used as the stock on which the young plants are to be grafted or inarched. Camellias are usually thought to look best in a house entirely devoted to them; and they may be certainly grown best in such a situation, as there are many points in which they differ exceedingly from most other greenhouse plants. They like the shade, and they are injured by too much heat. When exposed to the full effect of the sun, the flowers very frequently fall off without opening, or as soon as they have opened; but they are the better for having bottom-heat after they have done flowering, and when they are making their young shoots.

2.—CAMELLIA RETICULATA *Lindl.* THE RETICULATED-LEAVED CAMELLIA.

Engravings.—Bot. Reg., t. 1078; Bot. Mag., t. 2784; and our *fig.* 1, in Pl. 13.

Specific Character.—Leaves oblong, acuminated, serrated, flat, reticulated. Flowers axillary, solitary. Calyx five-leaved, coloured. Ovary silky. (*G. Don.*)

Description, &c.—This splendid species is botanically separated from *C. japonica* only by its reticulated leaves and silky ovary; but it can never be confounded with any of the varieties of that species, by even the most casual observer, from the appearance of its large and elegant flowers, which contain from sixteen to eighteen very large petals, which are loosely arranged, and form in every respect a decided contrast to those composing the flowers of *C japonica.* The stamens, also, instead of being all joined together at the base, form several distinct bundles. This very handsome plant was brought over by Captain Rawes, in 1824.

3.—CAMELLIA MALIFLORA *Lindl.* THE APPLE-BLOSSOM-FLOWERED CAMELLIA.

Synonyme.—C. Sasanqua flore pleno *Ker.*

Engravings.—Bot. Reg., t. 547; Bot. Mag., t. 2080; and our *fig.* 3, in Pl. 13.

Specific Character.—Leaves obovate, convex, bluntly serrated. Flowers terminal and axillary, usually solitary. Branches and petioles pubescent. Ovary smooth. (*G. Don.*)

Description, &c.—This beautiful little plant has small semi-double pink flowers, which bear considerable resemblance to some kinds of apple-blossom. It is a native of China, from which country it was brought to England in 1816. It is rather more tender than *C. japonica* or *C. reticulata.* When it was first introduced, it was supposed to be a variety of *C. Sasanqua.*

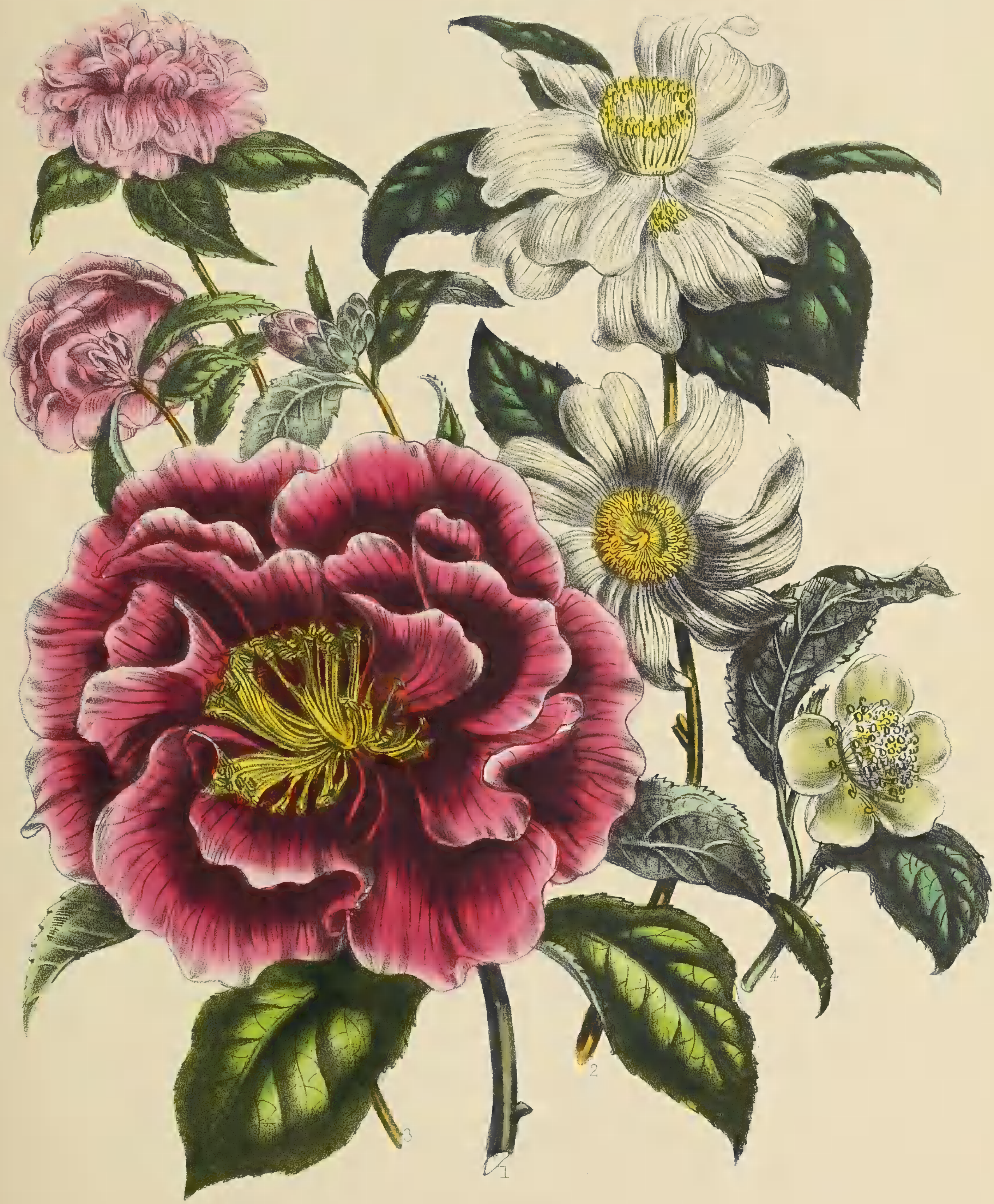
4.—CAMELLIA SASANQUA *Thunb.* LADY BANKS'S CAMELLIA.

Synonymes.—Thea oleosa *Lour.*; Cha-whaw *Staunt.*; Sasanqua *Kœmpf.*

Engravings.—Bot. Reg., t. 12, and t. 1091.

Specific Character.—Leaves ovate-oblong, serrated. Flowers terminal and axillary, solitary. Branches and ovary villous. (*G. Don.*)

Description, &c.—This plant forms a small tree, somewhat larger than the Tea tree, but smaller than *Camellia japonica.* Sir George Staunton, in his account of Lord Macartney's embassy to China, describes it in the following terms:—"A plant very like the Tea flourished, at this time, on the sides and the very tops of mountains, where the soil consisted of little more than fragments of stone, crumbled into a sort of coarse earth by the joint action of the sun and rain. The Chinese call this plant Cha-whaw, or Flower of Tea, on account of



1 *Camellia reticulata* 2 *Camellia oleifera*
3 *Camellia maliflora* 4 *Thea viridis*

the resemblance of one to the other, and because its petals, as well as the entire flowers of the Arabian Jasmine, are sometimes mixed among the teas, in order to increase their fragrance. This plant, the Cha-whaw, is the *Camellia Sasanqua* of the botanists, and yields a nut, from whence is expressed an esculent oil, equal to the best which comes from Florence. It is cultivated, on this account, in vast abundance; and is particularly valuable from the facility of its culture, in situations fit for little else." The species was introduced in 1811; but the double-flowered variety (Bot. Reg., t. 1091), which is much more ornamental, was not introduced till 1823.

5.—CAMELLIA KISSI *Wall.* THE NEPAL CAMELLIA.

Synonymes.—C. Keina *Hamil.*; Kengua in Nepal; Kissi-swa in the Newar language.

Engraving.—Lodd. Bot. Cab., t. 1815.

Specific Character.—Leaves elliptical, serrulated, bluntly acuminate. Flowers sessile, generally solitary, axillary, but somewhat terminal, usually four-petaled, with three distinct, furrowed, woolly styles, which are about equal in length to the stamens. (*G. Don.*)

Description, &c.—A very distinct species, a native of Nepal, whence it was introduced in 1825. Its growth is rather lax, with many long branches; and its leaves have a very strong, but transient, smell of tea. The Nepalese extract an oil from the seed, which is much valued by them as a medicine. The blossoms of this plant very closely resemble those of the black Tea.

6.—CAMELLIA OLEIFERA *Abel.* THE OIL-BEARING CAMELLIA.

Engravings.—Bot. Reg., t. 942; Lodd. Bot. Cab., t. 1065; and our *fig.* 2, in Pl. 13.

Specific Character.—Leaves elliptic-oblong, acute, serrated, coriaceous, shining. Flowers solitary. Calyces silky, deciduous. Petals five or six, two-lobed. (*G. Don.*)

Description, &c.—The flowers of this plant are very numerous; they are of a pure white, and fragrant. The Chinese extract an oil from the seed by pressure. The seeds are white, and are reduced to a coarse powder, when it is said to be boiled in bags before it is pressed for extracting the oil. The species was introduced about 1820. Dr. Abel, speaking of this plant as he found it in the South of China, observes, that it was generally as large as a moderate-sized cherry tree, and that even when it took the character of a shrub, it was seldom less than seven or eight feet high, presenting a beautiful appearance, from the great abundance of its large white blossoms.

7.—CAMELLIA EURYÖIDES *Lindl.* THE EURYA-LIKE CAMELLIA.

Synonyme.—Thea euryöides *Booth.*

Engravings.—Bot. Reg., t. 983; and Lodd. Bot. Cab., t. 1493.

Specific Character.—Leaves ovate-lanceolate, acuminate, serrated, silky beneath. Branches hairy. Peduncles lateral, one-flowered, scaly.

Description, &c.—This plant possesses none of the beauty of the other species, as its flowers are small, resembling those of an Orange more than those of a Camellia. But the plant is interesting from the singular circumstances which attended its introduction. In the year 1822, a very fine variety of *C. japonica*, which had been imported by the Horticultural Society from China, died down to the ground; and when, in the following spring, a fresh shoot sprang up, it was found to be this plant. Another Camellia sent home from China in 1824 having died in the same manner, this plant sprang up the following season from its roots also. It therefore appears evident, that the Chinese use this species as a stock for grafting their finer kinds of Camellia; and it will probably prove much hardier than any of the species of Camellia previously introduced.

GENUS IV.

THEA *Lin.* THE TEA.

Lin. Syst. MONADELPHIA POLYANDRIA.

Generic Character.—Calyx of five sepals. Petals five to nine, disposed in two or three rows, cohering at the very base. Stamens almost unconnected to the very base. Anthers roundish. Style trifid at the apex. Capsules three-berried, or three-seeded; the dissepiments are formed from the edges of the valves being bent inwards. (*Gært.*)

Description, &c.—This genus was separated from Camellia from a few botanical differences, not perceptible to any eyes but those of a botanist. In the Camellia, the stamens are generally conspicuously united at the base, but in the Tea they adhere together very slightly. The anthers are differently shaped, and the capsules are smooth on the outside, instead of being furrowed; the divisions inside are also formed by the edges of the valves being bent inwards, instead of having a dissepiment running down the centre of each valve, as in the Camellia. All the kinds of Tea resemble the Camellias, in being beautiful evergreen shrubs, with shining laurel-like leaves; but they differ in the flowers, which are much smaller in the Tea, and always white. The name of *Thea* is altered from *Tcha*, the Chinese name for tea.

1.—THEA VIRIDIS *Lin.* THE GREEN TEA.

Synonymes.—T. Bohea laxa *Ait.*; T. chinensis var. *a* viridis *Dec.*; T. cantonensis *Lour.*; Camellia viridis *Link.*

Engravings.—Bot. Mag., t. 3148; Lodd. Bot. Cab., t. 227; Woodv. Med. Bot. Supp. 116, t. 256; and our *fig.* 4, in Pl. 13.

Specific Character.—Leaves elliptic-lanceolate, coriaceously membranaceous, waved and wrinkled, convex from the margins being recurved. Flowers solitary, axillary, on a short peduncle, drooping.

Description, &c.—This species forms a handsome free-growing shrub, rising to the height of eight or ten feet, and requiring very slight protection. The leaves are rather broad, and their margins curve inwards. They are of a much thinner texture than those of the Camellia, and not of so dark a green on the upper surface; they are much paler below, with the midrib and veins prominent. The flowers are solitary, seldom more than one on each branch, and that near the top of the shoot, and drooping, so that the flower is scarcely seen without looking on the underside of the branches. The branches are large and spreading, and the tree, which is very nearly hardy, grows very rapidly, and with great vigour. Though this plant is called the green tea, it is said that both green and black tea are made from it, as they are also from the black tea; but the finer teas are generally made from the green. The tea called peko, is said to be made entirely from the half-opened buds of the green tea. It is said that there are thirty-six different kinds of tea made in China, and of these about twenty kinds are made from *Thea viridis*. The Japanese have a curious fable respecting the origin of tea. "An Indian prince, a holy and religious character, of the name of Darma, visited China about the year 516 of the Christian era, with the view to instruct the natives in the duties of religion. He led himself a life of great abstinence, and denied all manner of rest or relaxation to his body; but he was at length so weary of his fatigues and fasting, that he fell asleep. As a penance for so great a dereliction of duty, he cut off both his eyebrows, the instruments and ministers of his crime, and threw them upon the ground; each eyebrow became a shrub, and those shrubs the black and green Tea, whose virtues were till then as unknown to the world as the plant itself. Darma quickly discovered the agreeable properties of the foliage, which endowed his mind with fresh powers to pursue his divine meditations. Having recommended the use of it to his disciples, it soon became general in China, and has now extended to the remotest regions of the earth; while the individual who first discovered its qualities is held in remembrance by a rude figure in Chinese and Japanese drawings, of an old man standing upon water with a reed under his feet, and one of his eye-brows sprouting out into a Tea leaf." Upwards of a million square miles in China are occupied in the cultivation of the Tea Plant, which is there never suffered to attain any great height, the main stem being cut down every year to force the plant to send up new shoots, as the young leaves are more tender and have a finer flavour than the old ones.

Numerous attempts were made to introduce the Tea Plant before it was actually obtained, and amongst others, Archibald Duke of Argyle, who had a very fine collection of plants at his seat, at Whitton, near London, sent a collector to China with the express purpose of bringing home the Tea. The collector obtained a plant, but, unfortunately, the plant died during the voyage; and the collector having obtained, while in China, a specimen of the *Lycium Chinense*, also for the Duke, put the label of the Tea plant to it. The Duke of Argyle was at first deceived, but showing the plant to his friends, it was discovered to be a species of *Lycium*, and was supposed to be a variety of *Lycium barbarum*, which plant was already in the country. The Chinese Lycium was, in consequence of this circumstance, called the Duke of Argyle's Tea Tree; but as it was a weak feeble-growing plant, it was soon lost, and the name was transferred to *Lycium barbarum*, which still bears it, and which is even now supposed by some persons to be the true Tea Plant. Linnæus, however, had at last the honour of introducing this interesting plant alive to Europe; but not till he had experienced many disappointments, the following account of which is extracted from the "Botanical Magazine:"—"The seeds would never bear the voyage, for, like all oily seeds, they soon became rancid, and in that state would not vegetate. Finding this, Linnæus determined to import a plant, and his pupil, Osbeck, brought one as far as the Cape of Good Hope, where it was washed overboard in a storm. After this Lagerstrœm conveyed two shrubs to Upsal, supposing them to be the true Tea, but they turned out to be a species of Camellia, which the Chinese called by the same name as the Tea. Some months afterwards, a Tea plant 'reached the harbour of Gottenburg, in good health, but the evening before landing, the captain set the plant on the table of his cabin, where it was eaten by rats. At length, Linnæus advised Captain Ekeberg to sow the fresh seeds in pots of earth at the moment of his departure from China, so that they might vegetate after passing the line; and the growing plants were thus brought in safety to Gottenburg, the 3rd of October, 1763, and transported to the Botanic Garden of Upsal.'" It was not introduced into England till the year 1768. The green Tea is very nearly hardy in the neighbourhood of London, and if protected against severe frost, it will live in the open air, forming a handsome shrub from eight to ten feet high, with long, rather slender, branches, light green leaves, and large white fragrant flowers, which are produced in September and October.

2.—THEA BOHEA *Lin.* THE BOHEA OR BLACK TEA.

Synonymes.—T. chinensis var. Bohea *Sims*; T. Bohea var. stricta *Ait.*; T. sinensis *Black.*; T. frutex *Barth.*

Engravings.—Bot. Mag., t. 998; and Lodd. Bot. Cab., t. 226.

Specific Character.—Leaves elliptic, oblong, obtuse, crenated. Flowers of five sepals and five petals, axillary.

Description, &c.—This species of Tea is very distinct from *T. viridis*. The plant is much smaller, and more compact, and the branches are more rigid. The leaves are also of a much darker green, and more coriaceous in their texture; and the flowers are smaller. Notwithstanding, however, these very distinct marks of difference, some botanists still consider them to be only varieties of the same species. The black Tea is much more tender than the green, and requires either to be grown in a conservatory, or to be carefully protected during winter

OTHER SPECIES OF THEA.

It is said that there are several other species of this genus known in the East, but none of them have as yet been introduced into Great Britain.

CHAPTER XIV.

AURANTIACEÆ *Corr.*

Essential Character.—Calyx urceolate, campanulate, somewhat adnate to the disk, short, three to five-toothed, marcescent. Petals three to five, broadest at the base, sometimes free, sometimes a little connected at the base, inserted on the outside of the disk, imbricate in æstivation by the margins. Stamens equal in number with the petals, or double, or multiple that number; filaments flat at the base, sometimes free, sometimes variously connected in many bundles, sometimes truly monadelphous, but always free at the apex, and subulate. Anthers terminal, inserted by the base, erect. Ovary ovate, many-celled. Style one, terete, crowned by a thick subdivided stigma. Seeds situated in the carpels, fixed to their inner angles, numerous or solitary, exalbuminous, usually pendulous, often inclosing many embryos; seed-cover usually marked with a raphis and a cup-shaped chalaza. Embryo straight, with a retracted superior radicle turned towards the hilum, and large thick cotyledons, which are auricled at the base, and a conspicuous plumule. (*G. Don.*)

Description, &c.—The plants belonging to this order are smooth trees and shrubs, generally of great beauty The leaves are alternate, generally with a winged or dilated petiole, which is articulated both to the stem and to the leaves. This peculiarity of the jointed petiole is one of the distinguishing marks of the order, and it is very conspicuous in Orange and Lemon trees. Another peculiarity is, that the leaves, the rind of the fruit, and the flowers all abound in transparent reservoirs of fragrant oil, which possesses the most tonic and stimulating properties. The flowers are fragrant, and the fruit is generally eatable. All the plants require artificial heat in this country, and most of them will not live without a stove. The most interesting genus is Citrus, which contains the Orange, Lemon, Lime, and Shaddock.

GENUS I.

CITRUS *Lin.* THE CITRUS.

Lyn. Syst. POLYADELPHIA POLYANDRIA, OR POLYANDRIA MONOGYNIA.

Generic Character.—Calyx urceolate, three to five-cleft. Petals five to eight. Stamens twenty to sixty, with compressed filaments, which are more or less connected together at the base into many bundles, or free. Anthers oblong. Style cylindrical, crowned by an hemispherical stigma. Fruit baccate, seven to twelve-celled; cells many-seeded, full of pulp, spermaderm, membranous. Auricles of cotyledons very short. (*G. Don.*)

Description, &c.—The species belonging to this genus are all evergreen trees or shrubs, with axillary spines, and simple leaves, the foot-stalks of which are generally winged. The flowers are white, and exquisitely fragrant, but the odour is generally oppressive. The fruit is a kind of berry, the seeds lying in the midst of pulp, which is contained in innumerable little bags, which may be separated from each other with the greatest ease. Another peculiarity of the fruit of this genus is, that the carpels, which are disposed in a whorl round an imaginary axis, may be separated from each other without laceration, each consisting of a thin skin or membrane filled with pulp. The outer skin or rind seems to be an enlarged receptacle something like that of the fig, but never becoming pulpy; and it is full of transparent reservoirs of essential oil. There are numerous species of the genus Citrus, nearly all of which are in cultivation in Italy, though only a few of them are known in British greenhouses.

1.—CITRUS MEDICA *Risso.* THE CITRON.

Engravings.—Black. Herb., t. 361; Nouveau Duhamel, vol. vii., t. 22.

Specific Character.—Branches spiny; petioles naked; leaves oblong, obtuse, flowers with from thirty-five to forty stamens, often without a style; fruit oblong, wrinkled, with a thick rind and acid pulp. (*G. Don.*)

Description, &c.—The stem of this species rises to the height of twelve or fifteen feet, and the branches, instead of taking the close compact character usually found in orange-trees, spread widely, and assume a tree-like character. The flowers are purplish on the outside, and less odoriferous than those of most other species of the genus. The pulp is white and acid, and the rind is very thick and irregular. There are generally two seeds in each carpel. The fruit of the Citron is scarcely ever eaten raw, but when preserved, it makes a delicious sweetmeat. The species is a native of the warm regions of Asia, whence it was introduced in 1648. There are many varieties on the Continent, but seldom more than three are grown in this country.

2.—CITRUS LIMETTA *Risso.* THE SWEET LIME.

Synonyme.—Lima dulcis *Volk.*

Engraving.—Nouveau Duhamel, vol. vii., t. 26, *fig.* 2.

Specific Character.—Petioles subulate. Leaves ovate, roundish, serrulated. Flowers very white. Fruit globose, crowned, terminating in a point; rind very thin; flesh sweet.

Description, &c.—This species forms a handsome tree, with compact branches, which are easily trained into a round head. The young shoots are of a yellowish green, while those of the Citron are purplish; and the flowers, which are of a beautiful white on both sides, are very fragrant. The petioles of the leaves have scarcely any wings. The flowers are disposed alternately all along the branches, and each has about thirty stamens, the filaments of which are flattened, and adhere at their base into little bundles of three each. The fruit is rather small and round, terminating in an obtuse protuberance like that of the Lemon. The rind is very thin, of a dark orange-yellow, and it adheres firmly to the pulp, which is divided into from seven to ten cells. The juice is sweet, and has a delightful perfume. The seeds are very few in number, and are of an oval shape. There are ten varieties; the most ornamental of which is called the Bergamot, from its delightful perfume, and from the pulp of which, though it is bitter to eat uncooked, various kinds of sweetmeats are made. There is another kind of Lime, the fruit of which has an acid juice, and a much paler rind. The species was introduced in 1648.

3.—CITRUS LIMONIUM *Risso.* THE LEMON.

Synonymes.—C. Limon *Lin.*; Limon acris *Ferr.*; Limon vulgaris *Black.*

Engraving.—Nouveau Duhamel, vol. vii., t. 28.

Specific Character.—Petioles somewhat winged; leaves oval-oblong, crenulated; flowers with from twenty-five to thirty-five stamens, but usually without styles; fruit oblong, with a very thin rind, and very acid pulp. (*G. Don.*)

Description, &c.—The Lemon makes a very handsome tree, though its branches are somewhat angular. The young shoots are purplish, and the flowers have the same hue on the outside of the petals. The Lemon tree is remarkable for its fecundity, as it continues to flower and produce fruit from February to October, and sometimes the flowers continue expanding all the winter. The flowers are very fragrant when they first open, but their fragrance soon goes off. The fruit is oblong, terminating in a protuberance; the rind is of a pale yellow, thin but compact, frequently rough on the outside, but closely adhering to the pulp within. The pulp is divided into ten cells, which contain a very acid juice. There are many varieties of Lemons, but the most curious is the Chinese fingered Lemon, which has a solid fruit without any cells or pulp, and is divided in the middle into five or more long round parts, a little crooked, and having the appearance of the human hand, with the fingers slightly bent. The limes used in making punch are a small round variety of the Lemon.

4.—CITRUS PARADISI *Macfayden.* THE FORBIDDEN FRUIT.

Synonymes.—C. Limonum Paradisi *Risso*; Pomum Paradisi *Ferr.*

Specific Character.—Leaves oval, rounded, crenulate, smooth; petioles winged. Fruit large, subacid. (*G. Don.*)

Description, &c.—The tree of this species has numerous branches, and the leaves are much longer and narrower than those of any other kind of Citrus. The flowers are large, and have from four to seven unequal petals, which are tinged with purple like those of the Lemon. The fruit is very large, with a very thick rind, and scarcely any pulp, but what there is contains a very acid juice, and only two or three seeds. There are two varieties of this species, both of which are natives of Jamaica, where they form trees thirty feet high. The fruit makes an excellent sweetmeat, but is not good to eat uncooked.

5.—CITRUS AURANTIUM *Risso.* THE ORANGE.

Varieties.—C. A. sinense *Risso,* the China Orange; C. A. flore-pleno *Risso,* the double-flowered Orange; C. A. Hierocunthicum *Risso,* the Maltese Orange; C. A. minutissimum *Risso,* the Kin-kan Orange; C. A. ilicifolium *Risso,* the Holly-leaved Orange; C. A. nobile *Risso,* the Mandarin Orange.

Specific Character.—Petioles almost naked. Leaves ovate-oblong, acuminate, with a blunt point. Flowers with twenty or twenty-two stamens. Fruit globose, with a thin rind, and a sweet pulp. (*G. Don.*)

Engravings.—Nouveau Duhamel, vol. vii., t. 35, *fig.* 3. Of the variety C. A. nobile, Bot. Reg., t. 211.

Description, &c.—The Sweet Orange forms a noble tree, growing to the height of from twenty to forty feet. The trunk is naked at the bottom, and the branches form a tuft at the top. The flowers are white and very fragrant, and as they continue appearing for several months together, the tree has almost always flowers and fruit on it at the same time. The species is a native of Asia, but it has been long cultivated in the South of Europe, and many of the varieties have been originated there. These varieties are very numerous, but the best of them are the following:—the China Orange, which is the kind most generally sold in the market, and which not being so sensitive to cold as the other varieties, is grown in the open air in great quantities at Nice and in the Azores; the Genoa Orange, which is imported in great quantities from Genoa, and which has a thick rind, commonly marked with a little ridge down one side: this orange is considered very inferior to the preceding variety. The double-flowered Orange has flowers composed of ten petals, the pistil is usually divided in two parts at the top, each bearing a yellow stigma, and the pulp of the fruit is formed of a double range of cells, unequal in size, but all full of very sweet juice: this tree is very seldom cultivated. The Maltese Orange has a very thin rind, and the pulp, which is at first of a golden yellow, becomes of a deep red when it is ripe; the juice is very sweet, and the seeds are very small. The small-fruited Orange has lanceolate leaves, and very long petioles; the fruit of this variety is not much larger than a cherry; it is very ornamental, but the juice is acid. The Mandarin Orange has both the rind and the pulp of the fruit reddish; it has sweet juice, and a sweet eatable rind, which adheres so loosely to the pulp as to be separable from it by the slightest effort, and which, when ripe, often separates naturally. There are many other varieties, but these are the most important. The Sweet Orange trees are generally propagated by budding or grafting on the Citron or the Seville Orange, as when Sweet Oranges are raised from seed, they do not bear any blossoms till they are seven or eight years old. They are, however, occasionally propagated by cuttings or by layers. The plants should be potted in a loamy soil, mixed with vegetable mould and the remains of an old hotbed, as they require a somewhat rich but stiff soil. They may be kept in a dormant state at a temperature of 40° during winter; but they should not be exposed to a greater degree of cold, as though they will bear some frost without being killed by it, the beauty of their leaves and flowers will be quite destroyed. Orange trees may be kept through the winter in a house with an opaque roof; but when this is the case, great care should be taken to give them plenty of air, and to prevent them from being affected by the damp, as damp is quite as injurious to them as cold. Even in the growing season, orange trees do not require a great deal of water, but care should be taken that they have enough, by piercing the ball of earth containing the roots in several places with an iron rod, as unless this is done, the mass of earth in the pot or tub often becomes quite hard, and the water runs down its sides, between the earth and the pot, without penetrating into the centre. The trees are generally kept in boxes, which are made to open on each side in order to allow the gardener to examine the roots; and a box for a tree seven or eight feet high, with a well-formed head of six feet in diameter, ought to be about four feet square. The trees are generally pruned in February, and only the ill-placed branches are cut out, unless the fruit is an object, in which case the branches should be thinned and shortened like other fruit trees. The orange trees which are imported from Italy have generally been so severely cut in as to be two years before they come into blossom properly, but when they do, they usually form handsome trees. In choosing the plants at an Italian warehouse, it is not always advisable to select those which have the strongest roots, and appear the most healthy trees, as they are usually either Shaddocks or Citrons, and of course are less valuable, both in their flowers and fruit, than the Sweet Oranges. Oranges will remain on the tree for two or three years, but Lemons drop as soon as they are ripe.

6.—CITRUS VULGARIS *Risso*. THE SEVILLE ORANGE.

Synonymes.—C. Aurantium *Ker*; C. A. indicum *Gall.*; C. Bigaradia *Ferr.*; C. sinensis *Pers.*; C. Calot *Lag.*

Varieties.—C. v. corniculata *Risso*, the horned Seville Orange; C. v. folio crispa *Risso*, the bouquette Seville Orange; C. v. multiflora *Risso*, the many-flowered Seville Orange; C. v. flore-pleno *Risso*, the double-flowered Seville Orange; and C. v. myrtifolia *Risso*, *syn.* C. Aurantium myrtifolia *Ker*, the Myrtle-leaved Seville Orange.

Engravings.—Nouveau Duhamel, vol. vii., t. 30. Of the variety C. Aurantium myrtifolia, Bot. Reg., t. 346.

Specific Character.—Petioles winged. Leaves elliptical, acuminate, crenulated. Flowers with twenty stamens. Fruit globose, with a thin, scabrous, or smooth rind, and a bitter acrid pulp. (*G. Don.*)

Description, &c.—This species does not form quite so large a tree as the sweet Orange. The petioles have heart-shaped wings, the flowers are white, and the filaments of the stamens are flat. The rind of the fruit is sweet-scented, but the pulp, which is divided into twelve or fourteen cells, contains a bitter acid juice. The fruit is used in making wine and marmalade, and also in medicine; and the best orange water is obtained by distillation from the flowers. There are many varieties of the Seville Orange, but perhaps the most distinct are those mentioned below. The Horned Orange has a tall tree, with large leaves and fruit, the pulp of the latter being divided into fourteen cells separated from each other by pith, but without any marked centre, so that when the orange is cut across, it has somewhat the appearance of a Pomegranate. Eau de Bigarade is made from the flowers of this variety. The Boquettier is a small tree, thickly covered with leaves, which are curiously curled up. The flowers are produced six or seven together; they have six petals each, and have the fragrance of the Lily of the Valley. The fruit has a tubercled and very thick rind, which contains a bitter acid pulp. The many-flowered and double-flowered Seville Oranges are only remarkable for their flowers, which are very ornamental. The Myrtle-leaved Orange never grows to be a tree, but is generally a very small shrub. The leaves closely resemble those of the broad-leaved Myrtle; the flowers are small, white, and very numerous; and the fruit, which is also very small, is full of a very bitter acid juice. The species was introduced in 1595, and its culture is the same as that of the Sweet Orange.

7.—CITRUS DECUMANA *Lin.* THE SHADDOCK.

Engraving.—Noveau Duhamel, vol. vii., t. 38.

Specific Character.—Branches prickly. Leaves oval, obtuse, emarginate, pubescent beneath. Petioles with broad cordate wings. Fruit large, with a red or white pulp. Stamens thirty. (*G. Don.*)

Description, &c.—This species is a native of China and Japan, and as in the latter country it is called Pampelmoes, this name has been corrupted by the French into Pampelmouse. The fruit is very large and round, being frequently ten or fourteen pounds in weight; the rind is very thick, and of a greenish-yellow tinge; the pulp is generally white, and the juice acid. The fruit takes its popular English name from Captain Shaddock, who first took it from China to the West Indies, and it is only good for preserving. The plant is rather more tender than most of the other species of the genus Citrus.

GENUS II.

MURRAYA *Kœn.* THE MURRAYA.

Lin. Syst. DECANDRIA MONOGYNIA.

Generic Character.—Calyx five-parted. Corolla campanulate, five-petaled. Stamens ten, with linear, awl-shaped filaments, and roundish anthers. Fruit baccate, sometimes two-celled, but usually one-celled. Seeds pendulous, with a thick woolly covering. (*G. Don.*)

Description, &c.—The plants belonging to this genus are trees, with pinnate leaves and white sweet-scented flowers. The fruit is eatable, but not particularly agreeable. The genus is named in honour of Professor Murray, a German botanist, a pupil of Linnæus, and editor of some of his works. There are three species, two of which have been introduced.

1.—MURRAYA EXOTICA *Lin.* THE ASH-LEAVED MURRAYA, OR CHINESE BOX TREE.

Synonymes.—Chalcas paniculata *Houtt.;* C. japonensis *Lour.;* C. cammuneng *Burm.;* Marsana buxifolia *Sonn.;* Camunium japonense *Rumph.*

Engraving.—Bot. Reg., t. 434.

Specific Character.—Leaves alternate, pinnate; leaflets five or seven, oblique, obovate-oblong. Corymbs terminal, globose, crowded.

Description, &c.—This species, in England, is generally a small shrubby plant, if kept in a pot, or a tolerably large handsome shrub if planted in the open ground in a conservatory; but in the East Indies it takes the form of a small tree, with a pale ash-coloured bark. It is not a native of the East Indies, but was brought originally from China to the coast of Coromandel. The plant was introduced into England in 1771, and it proves a most desirable evergreen for either the conservatory or the greenhouse. The flowers are of a beautiful opaque snow-white hue, and they are delightfully fragrant. The leaves are of a very dark and yet bright green, resembling those of the common box, whence the plant takes its name; and the fruit, which is about the size of a large pea, has a leathery rind, and resembles a small orange. The tree is a great favourite with the Chinese, and is cultivated in almost all their gardens.

OTHER SPECIES OF MURRAYA.

M. PANICULATA *Jack.*

This species is said to be a native of the East Indies. It forms a tree twenty feet high; and its flowers, which are white, and have the fragrance of the Jasmine, are produced in panicles. The fruit is about the size of a small capsicum; it is red, and smells like a gooseberry.

GENUS III.

COOKIA *Sonn.* THE WAMPEE TREE.

Lin. Syst. DECANDRIA MONOGYNIA.

Generic Character.—Calyx five-cleft. Petals five, navicular, villous. Fruit baccate, somewhat globose, five-celled, but sometimes only one or two-celled from abortion; cells one-seeded.

Description, &c.—These are small trees with impari-pinnate leaves; the leaflets are alternate, and unequal at the base. The plants are mostly natives of China; and the genus was named in honour of Captain Cook, the celebrated circumnavigator, who was killed in the Sandwich Islands in 1779.

1.—COOKIA PUNCTATA *Retz.* THE COMMON WAMPEE TREE.

Synonyme.—Quinaria lansium *Lour.*

Specific Character.—Leaflets ovate-lanceolate, only slightly unequal at the base.

Description, &c.—A middle-sized tree, with small white flowers, which are disposed in racemose panicles. The fruit is eatable; it is about the size of a pigeon's egg, yellow on the outside, with a white pulp, which is sweet, but slightly acrid. This fruit is sold in the markets at Canton. In England it requires to be grown in a conservatory, except in the warmest parts of Devonshire, where it may be planted in the open ground; but when this is the case, it requires to be protected in winter, as a slight frost will kill it.

OTHER SPECIES OF COOKIA.

There are several other species belonging to this genus, one of which (*C. falcata*) has sickle-shaped leaflets, and another has blue fruit. Very little, however, is known of these plants.

OTHER GENERA BELONGING TO THE ORDER AURANTIACEÆ.

FERONIA ELEPHANTUM *Roxb.* THE ELEPHANT APPLE.

This plant is a native of Coromandel, where it grows wild in the woods on the mountains. The flowers are white, with red anthers; and the fruit is as large as an apple. The wood is white, hard, and durable, and a transparent liquor which exudes from it when it is cut or broken, is useful for mixing up painters' colours.

ÆGLE MARMELOS *Corr.* THE BENGAL QUINCE.

This plant is also a native of the mountainous parts of Coromandel, where it forms a shrub ten feet high. The fruit is much larger than the Elephant Apple, and more delicious to the taste. It is also exquisitely fragrant.

In some respects it resembles an orange, but it contains a large quantity of an exceedingly tenacious transparent gluten, which, when fresh, may be drawn out into threads two or three yards long. From the rind the Dutch in Ceylon prepare a perfume. The flowers are white and very fragrant. This plant in England requires a stove.

CHAPTER XV.

HYPERICINEÆ *Dec.*

Essential Character.—Calyx four to five-parted, or four to five-sepaled, permanent, usually unequal, the two outer ones small, the three inner ones largest, usually dotted and glandularly-toothed. Petals four to five, hypogynous, alternating with the lobes of the calyx, twisted in the bud, commonly yellow, and veined, sometimes full of black dots. Stamens numerous, usually indefinite, collected together at the base into small bundles, very rarely free or monadelphous, with long filaments, and yellow, minute, oscillatory anthers. Ovary one, free. Styles numerous, but sometimes joined into one. Stigmas simple, rarely capitate. Capsules many-valved, many-celled; cells equalling the styles in number. Central placenta entire, or many-parted, fixed to the inflexed margins of the valves. Seeds numerous, commonly terete, rarely flat. Integument double, both membranous. Embryo straight, with an inferior radicle, destitute of albumen. (*G. Don.*)

Description, &c.—The plants belonging to this order are some of them herbaceous, and some of them shrubby; some of them even attaining the size of trees. They all abound in a yellow resinous juice, so nearly approaching the gamboge, that one of the species has received the name of the American Gamboge Tree. This order may be easily distinguished from the preceding ones by its abounding in a resinous juice. The flowers are generally large and showy, and they are produced in great abundance. The principal genus in the order is *Hypericum.*

GENUS I.

HYPERICUM *Lin.* THE ST. JOHN'S WORT.

Lin. Syst. POLYADELPHIA POLYANDRIA.

Generic Character.—Capsule membranaceous. Stamens numerous, free, or joined at the base into three or five bundles. Petals five. Sepals five, more or less connected at the base, unequal, rarely equal. Styles three to five, rarely connate in one, permanent. Capsule one or many-celled, many-seeded, three to five-valved. Integument of seed double. Albumen none. Embryo with the radicle situated at the umbilicus, and with semi-cylindrical cotyledons. (*G. Don.*)

Description, &c.—All the species belonging to this genus are either herbaceous or suffruticose. They are natives of various countries, so that some are quite hardy in this country, while others require a greenhouse or a stove. The leaves are opposite, and either sessile or with very short footstalks, and they are usually full of transparent black dots. The margins of the leaves are also frequently very elegantly fringed. The flowers are variously disposed, but they are almost always yellow.

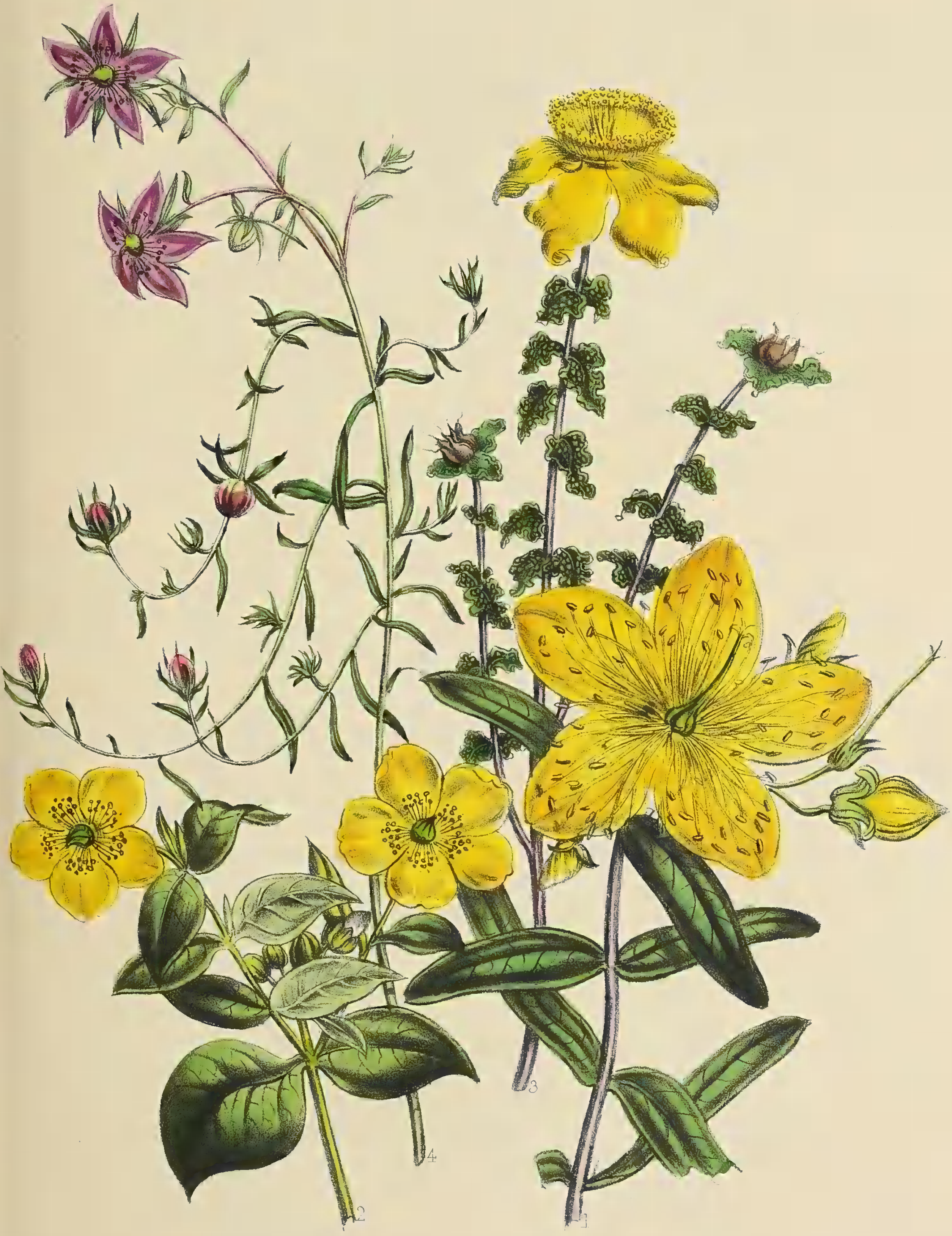
1.—HYPERICUM MONOGYNUM *Lin.* THE CHINESE ST. JOHN'S WORT.

Engravings.—Bot. Mag., t. 334; and our *fig.* 1, in Pl. 14.

Specific Character.—Stem terete, shrubby. Leaves oblong-oval, recurved at the base, somewhat auricled, without dots. Peduncles subcorymbose, leafy, bibracteate; bracteas nearly opposite. Sepals lanceolate, acutish. Styles five, coadnate, equal in length to the stamens and corolla.

Description, &c.—This plant is a native of China, and it was first introduced into this country in 1753, by Hugh Duke of Northumberland. It is a half-hardy greenhouse plant, which if planted in a very warm situation, will live in the open air; and even in that situation it will continue in flower nearly all the summer; but if kept

Pl. 14.



1 *Hypericum monogynum.* 2 *Hypericum Uralum*
3 *Hypericum balearicum.* 4. *Reaumuria hypericoides*

in a greenhouse, or at any rate removed into shelter in autumn, it will continue in flower nearly all the year. It is propagated by layers, and as layers of woody plants should be made from the first of July till September or October, it may be as well to say a few words here on the subject. The operation of layering is performed by choosing a young shoot, generally of the current year, bending it down to the ground, and after having fixed it there at a joint with a hooked stick, covering it an inch deep or more with soil. To facilitate the rooting of all layers, particularly of woody plants, it is customary to make a notch or slit in that part of the shoot which is buried in the soil; or it is twisted, and a portion of the bark taken off, or it is in some other way wounded, bruised, or injured, so as to check the return of the sap by the bark; when the sap accumulating at the upper part of the wound forms a callosity there of granulated matter, from which the roots are soon after emitted. It must be observed that the great point in making a layer of any woody plant, is to form an obstruction to prevent the return of the sap, as unless an accumulation of sap takes place, roots cannot be produced. When a slit is made in the shoot of a woody plant, it is always made on the upper side, and the knife is entered immediately below a bud or joint; and it must be observed that it is from the joints the roots are expected to proceed, and that consequently it is the joints that must be buried in the earth. The layers made the latter end of summer or in autumn are generally ready for removing from the parent plant the following spring.

2.—HYPERICUM URALUM *Ham.* THE NEPAL, OR MYRTLE-LEAVED ST. JOHN'S WORT.

Engravings.—Bot. Mag., t. 2375; and our *fig.* 2, in Pl. 14.

Specific Character.—Branches compressed, two-edged. Leaves elliptical, mucronulate, smooth, shining. Flowers terminal, somewhat corymbose; sepals oval, very blunt; petals orbicular; styles shorter than the stamens. (*G. Don.*)

Description, &c.—This species is a native of Nepal, where it was first discovered by Dr. Francis Hamilton. In India it is called Urala Swa. When it was first introduced it was thought it would prove hardy, but it is now found that it requires the protection of a conservatory. It grows about two feet high, and the leaves are much more ornamental than those of most other plants of the genus, as in general the leaves are so numerous in proportion to the flowers, as to give the plants somewhat of a weedy appearance. The species was introduced in 1823, and it flowers from July to September.

3.—HYPERICUM BALEARICUM *Lin.* THE MAJORCA ST. JOHN'S WORT.

Engravings.—Bot. Mag., t. 137; and our *fig.* 3, in Pl. 14.

Specific Character.—Stem quadrangular, warted. Leaves ovate, obtuse, rather stem-clasping. (*G. Don.*)

Description, &c.—This is a very singular looking plant, which, notwithstanding the size and brilliant colour of its flowers, is not very ornamental, from the leaves having the look of being diseased. The stalks of this species are usually of a bright red, and covered with little warts. The leaves are small, with many depressions on their upper side like scars; and the flowers are either solitary or form a kind of corymb. The plant is tolerably hardy, and it is readily propagated by cuttings. It continues producing a succession of flowers during the greater part of the summer. It was first called Myrtle Cistus, and is said to have been introduced under that name in the year 1580, by Thomas Penny, a physician in London in those days.

OTHER SPECIES OF HYPERICUM.

H. GRANDIFLORUM *Chois.*

This is rather a handsome species, a native of the Canary Islands, the flowers of which are produced in clusters. It flowers in July and August. *H. floribundum* and *H. milleporum* are two other natives of the Canary Islands, which are also very ornamental. *H. canariense* is one of the oldest inhabitants of our greenhouses belonging to this family, as it is said to have been introduced by the Duchess of Beaufort in 1699. It is an ornamental little plant, with rather pale yellow flowers. The flowers seldom come out till late in the season, but they last till winter. The plant requires to be kept in the greenhouse or conservatory, and it may be multiplied by cuttings. The soil should be a light loam.

H. CHINENSE *Lin.*

This species is a native of the East Indies, and it is remarkable for the brilliant yellow of its flowers. The leaves are marked with a few black dots.

H. CORDIFOLIUM *Chois.*

This is a very handsome species, with heart-shaped leaves, and an abundance of brilliant yellow flowers. It is a native of Nepal, and was introduced in 1825.

There are several other species that require a greenhouse in this country, and a few from Java and the hottest part of Brazil, which will not live without a stove. All these have yellow flowers, but there is one greenhouse species, which has been called *H. Cochin-Chinensis*, which is said to have scarlet flowers, and to be a shrub sixteen feet high. It is doubtful, however, whether this plant really belongs to the genus.

The genus *Lancretia* contains only one plant, a pretty little greenhouse prostrate shrub, with clusters of white flowers. It is a native of Upper Egypt and Nubia.

The genus *Ascyrum* contains several species, all of which are elegant little plants, most of them being shrubby, and having elegant yellow flowers. They are all natives of North America, and the genus was formerly included in that of Hypericum.

The genus *Ochranthe* is placed in this order by some botanists, though it is by no means certain, as the only plant known of it in this country died soon after it had flowered, and it has never again been introduced. The flowers were ornamental, looking like a panicle of very small pale yellow or cream-coloured roses. It is a native of China, and was lost after having flowered in March 1826, having been introduced a year or two previously.

CHAPTER XVI.

REAUMURIACEÆ *Lindl.*

Essential Character.—Calyx five-parted, surrounded externally by imbricating bracteas. Petals five, hypogynous. Stamens definite or indefinite, hypogynous, with or without a hypogynous disk; anthers peltate. Ovarium superior. Styles several, filiform or subulate. Fruit capsular, with two or five valves, and as many cells, opening into the middle of the cells. Seeds definite, villous. Embryo straight, surrounded by a small quantity of mealy albumen, with the radicle next the hylum. (*G. Don.*)

Description, &c.—The plants belonging to this order are shrubs, with small fleshy leaves, which are frequently arranged like scales. The flowers are solitary. The genus *Reaumuria* was formerly included in *Ficoideæ* with the Mesembryanthemums, but it is found so essentially different from that order, that it is now formed into an order of its own, and placed in a different division of the Natural System. The chief peculiarity which distinguishes these plants from the genus Mesembryanthemum is, that the stamens grow from below the seed-vessel instead of being attached to the calyx.

GENUS I.

REAUMURIA *Lin.* THE REAUMURIA.

Lin. Syst. POLYANDRIA PENTAGYNIA.

Generic Character.—Calyx five-parted, involucrated by leaves on the outside. Petals five, furnished with a ciliated appendage on each side at the base. Ovarium distinct. Stigmas five or six, filiform. Capsule five-celled, five-valved; dissepiments easily separated from the valves; seeds two in each cell, very hairy. (*G. Don.*)

Description, &c.—There are only two species belonging to this genus, and they are both oriental shrubs, with fleshy dotted leaves, which exude globules of saline alkali, and are of a glaucous colour. The flowers are produced at the ends of the branches. The genus is named after the celebrated entomologist Reaumur.

1.—REAUMURIA HYPERICOIDES *Willd.* THE HYPERICUM-LIKE REAUMURIA.

Synonymes.—R. linifolia *Salisb.*; R. cistoides *Lin.*; R. vermiculata var. β *Buxb.*; Hypericum alternifolium *Lab.*

Engravings.—Bot. Mag., t. 2057; Bot. Reg., t. 845; and our fig. 4, in Pl. 14.

Specific Character.—Leaves lanceolate, flat, rather remote. (*G. Don.*)

Description, &c.—This species is a native of Syria and Persia, in dry sandy places. The stem is half shrubby; and the leaves are narrow, fleshy, and covered with glandular dots. The leaves, when chewed, have a slightly acid and yet salt taste. The plant was introduced about the year 1800; and it flowers from May till August. The flowers are pretty, and rather singular, as the petals are of a reddish purple, and the anthers are blue. The hairs on the seeds are quite woolly. The plant should be kept in a greenhouse, but it does not require any extraordinary heat.

OTHER SPECIES OF REAUMURIA.

R. VERMICULATA *Lin.*

This species is a native of Sicily, Barbary, and Egypt. The flowers are of a pale red; and the hairs on the seeds are of a rusty colour and very stiff. The plant flowers from July to October, and it was introduced in 1828.

CHAPTER XVII.

SAPINDACEÆ *Dec.*

Description, &c.—Only two or three plants belonging to this order can be called ornamental, and even those rather belong to the stove than to the greenhouse. Most of the species, indeed, are natives of the East Indies, Jamaica, and the west coast of Africa, so that they require great heat to be grown at all in this country. There is, however, one hardy tree, the *Kölreuteria paniculata,* and one ornamental greenhouse shrub, *Diplopeltis Hügelii,* a native of New Holland, introduced in 1838. It is a pretty little plant, with small pink flowers and glaucous leaves.

CHAPTER XVIII.

MELIACEÆ *Dec.*

Description, &c.—This order, like the last, consists almost entirely of stove plants, and, in fact, there is only one species deserving of cultivation in a conservatory, and this is the Indian Lilac, or common Bead Tree (*Melia Azedarach*). It is a native of the east, being found wild in Syria; but it is of such easy cultivation in all climates that are sufficiently warm for it, that it appears to have become acclimatised wherever it has been introduced; and hence it has been found growing spontaneously in the East and West Indies, in North and South America, and in the South of Europe. In the latter country, indeed, it is cultivated on a large scale for the sake of its seeds, which are in common use for making rosaries, for which they are admirably suited, having naturally a hole through them, so that they do not require to be perforated. It is from this use that the plant has taken its name of Bead Tree; its other popular name of the Indian Lilac alludes to its flowers bearing considerable resemblance to those of the common Lilac. It is also sometimes called the Pride of India, but this name more properly belongs to another plant, viz. *Lagerstrœmia indica.*

CHAPTER XIX.

CEDRELEÆ *Brown.*

Description, &c.—Only two greenhouse plants belong to this order, and both are natives of New Holland: one being a shrub with white flowers, called *Flindersia australis;* and the other a tree a hundred feet high, the flowers of which are unknown. The latter plant is called Yellow Wood (*Oxleya xanthoxyla*). This order contains the Mahogany Tree and the Satin Wood Tree; but both require the protection of a stove in Great Britain, and are not ornamental in their flowers.

CHAPTER XX.

AMPELIDEÆ *Dec.*

Description, &c.—The principal plants belonging to this order are the different kinds of Vine, none of which can properly be called ornamental, though one (*Vitis riparia*) is sweet scented. The Virginian Creeper belongs to this order, but it is perfectly hardy. Several of the species belonging to the genus *Cissus* are greenhouse plants, but they have inconspicuous flowers, and can scarcely be considered ornamental.

CHAPTER XXI

GERANIACEÆ *Dec.*

Essential Character.—Calyx permanent, of five sepals; sepals more or less unequal, imbricate in æstivation, sometimes one of them is drawn out into a hollow spur at the base, which is closely connate to the peduncle. Petals five (rarely four, one of which being abortive, very rarely absent altogether), unguiculate, alternating with the sepals, equal or unequal; in the first they are hypogynous, in the second they are usually inserted in the calyx or connated together. Stamens with the filaments rarely free, but almost always monadelphous at the base, disposed in a simple series, hypogynous or perigynous, equal or double in number to the petals, rarely triple that number, as in *Monsonia;* sometimes some of them are sterile, equal or unequal. Ovary at first five-celled, ending in a long thick style, crowned by five stigmas. Carpels five, rather membranous, indehiscent, one-celled, biovulate, at first pressed to the base of the torus, each ending in a style or awn, which is closely adnate to the angles of the torus, but after maturity twisting variously from the base to the apex, and, by their elasticity, separating the carpels from the torus, but still adhering at the middle to the top of the torus. Seeds solitary in the carpels, pendulous, exalbuminous. Embryo curved, with a deflexed radicle directed to the bottom of the carpel, with leafy, convolute, or flexuously plicate cotyledons, which are sometimes lobed. (*G. Don.*)

Description, &c.—There are several genera in this order, most of which have been introduced. Those best known are the genera Geranium and Pelargonium; the plants usually called Geraniums belonging chiefly to the latter genus, nearly all the species contained in which are greenhouse plants. All the species are herbaceous or suffruticose, and the young stems are jointed at the articulations, and easily separable without tearing the outer skin. Most of the kinds are fragrant, and the juice of some of them is so astringent that it will blacken a steel knife, if one is used to cut through the stem. The carpels of the seed-vessels terminate in long points, which grow together like the beak of a bird; and when the seed is ripe, the carpels separate at the base, and curl up, the points remaining attached at the apex

GENUS I.

MONSONIA *Lin.* THE MONSONIA.

Lin. Syst. POLYADELPHIA MONOGYNIA.

Generic Character.—Calyx of five equal sepals, with an awned mucrone at the apex of each. Petals five, equal, twice the size of the calyx. Stamens fifteen, disposed in five bundles, containing three anthers in each. (*G. Don.*)

Description, &c.—The species in this genus are perennial or biennial plants, with large showy flowers, which were common in greenhouses forty or fifty years ago, but are now very seldom met with. The genus is named in honour of Lady Ann Monson, who introduced many curious plants from India, and who assisted Mr. Lee, of the Hammersmith Nursery, in writing his *Introduction to Botany.*

1.—MONSONIA LOBATA *Mont.* THE LOBED-LEAVED MONSONIA.

Synonymes.—M. filia *Lin. fil.;* Geranium anemonoides *Thunb.* Engraving.—Bot. Mag., t. 385.

Specific Character.—Leaves cordate, five to seven-lobed; lobes blunt, serrated, hairy beneath.

Description, &c.—The flowers of this plant are very pretty in the bud, but have no beauty comparatively when they have expanded, as they generally open irregularly, and, indeed, frequently drop without opening at all, particularly if kept in a shady place. It is, indeed, a very difficult plant to grow, or at least to flower, in this country, as it requires a very powerful degree of light and heat from the sun. It is a native of the Cape of Good Hope, and was introduced in 1774. It flowers in April and May. The leaves are very little cut, and the seed-vessel has an exceedingly long beak. The plant grows about a foot high.

2.—MONSONIA SPECIOSA *Lin. fil.* THE SHOWY MONSONIA.

Synonymes.—M. grandiflora *Burm.*; Geranium speciosum *Thunb.* Engraving.—Bot. Mag., t. 73.

Specific Character.—Leaves palmately five-parted, with the segments finely bipinnatifid. The leaves, petioles, and calyxes are all hairy.

Description, &c.—This is by far the handsomest species of the genus, and, singularly enough, though it is a native of the same country as the last (both coming from the Cape of Good Hope), it is much more easy to flower, as it only requires the ordinary degree of light usually found in greenhouses. It is easily propagated by cuttings of the root, planted in a pot of mould, and plunged into a hotbed or tan-pit. The point of the cutting which contains a bud should be left just above the earth, and in a very short time, if the cutting succeeds, this bud will produce a shoot which will flower the same season, or the following spring. The flowers of this species are much larger than those of the other. There are two varieties, in one of which the flowers are rose-coloured, with a dark crimson eye, and greenish outside; and in the other they are straw-coloured, with a red centre, and a dark velvet-like eye. The species was introduced at the same time as the other, and the flowers are produced at the same season; that is, in April or May, unless the plant has been raised from a cutting, in which case it frequently flowers in the autumn.

OTHER SPECIES OF MONSONIA.

M. PILOSA *Willd.*

This species is probably only a variety of the last, as the principal difference appears to consist in the whole plant being more hairy, and the flowers of a somewhat darker colour.

GENUS II.

SARCOCAULON *Sweet.* THE SARCOCAULON.

Lin. Syst. MONADELPHIA DODECANDRIA.

Generic Character.—Calyx of five equal mucronately-awned sepals. Petals five, equal, twice as large as the sepals. Stamens fifteen, joined together in one body at the base. (*G. Don.*)

Description, &c.—The plants belonging to this genus are all natives of the Cape of Good Hope, and of course all require a greenhouse in this country. The species are shrubs, with fleshy and spiny stems, and generally very large and ornamental flowers. They take their name from two Greek words signifying a fleshy stem.

1.—SARCOCAULON L'HERITIERI *Swt.* L'HERITIER'S SARCOCAULON.

Synonymes.—Monsonia spinosa *L'Her.*; M. L'Heritieri *Dec.*

Specific Character.—Leaves ovate, mucronate, entire, some of them almost sessile, others on long stalks. (*G. Don.*)

Description, &c.—A very showy plant, with dark crimson flowers two inches in diameter. The petioles of the leaves do not fall off, but remain in the shape of spines. The peduncles are one-flowered. The plant was introduced in 1790, and it flowers in May and June. It succeeds best when planted in a conservatory, where it forms a handsome bush two feet high.

OTHER SPECIES OF SARCOCAULON.

S. PATERSONII *G. Don.*

This species has wedge-shaped leaves, and purplish crimson flowers, which are not quite so large as those of the previous species. It was introduced in 1827.

S. BURMANNI *Sweet.*

The leaves of this species are wedge-shaped, and the branches knotted; the flowers are much smaller than those of either of the other species; and the seed-vessels have twisted awns. When the leaves fall, the petioles remain, and become spines. All the species are natives of the Cape of Good Hope, and they are all easily grown in a greenhouse in this country; they are very ornamental, and are readily distinguished from *Monsonia*, which the flowers resemble, by their spiny stems.

GENUS III.

GERANIUM *L'Her.* THE CRANE'S-BILL.

Lyn. Syst. MONADELPHIA DECANDRIA.

Generic Character.—Calyx of five equal sepals. Petals five, equal. Stamens ten, five of which are fertile and longer than the sterile five, alternating with each other, with a nectariferous gland at the base of each of the larger stamens. Awns of carpels smooth on the inside, at length separating elastically from the base to the apex of the axis, where they adhere, circinnately revolute. (*G. Don.*)

Description, &c.—The plants belonging to this genus are partly hardy, and partly sufficiently tender to require a greenhouse in this country; and the true Geraniums are nearly all herbaceous, as those plants which are called Geraniums, generally speaking, belong to the genus Pelargonium. A few years ago, indeed, all the greenhouse Geraniums were Pelargoniums; those belonging to the genus Geranium having been neglected on account of the comparative smallness of their flowers. Latterly, however, hybrids have been raised between some of the species of Pelargonium and some of the true Geraniums, and I have, therefore, thought it advisable to mention one or two of the most ornamental species of the latter. The word *Geranium* signifies Crane's-bill, in allusion to the shape of the seed-vessels, which with their long awns, bear some resemblance to the head of a crane. Some of the greenhouse species of this genus are, like the Pelargoniums, natives of the Cape of Good Hope; but several of them are from other countries.

1.—GERANIUM ANEMONEFOLIUM *L'Her.* THE ANEMONE-LEAVED GERANIUM.

Synonymes.—G. palmatum *Cav.*; G. lævigatum *Burm.*
Engravings.—Bot. Mag., t. 206; Sweet's Geraniaceæ, t. 244; and our *fig.* 1, in Pl. 15.

Specific Character.—Stem suffruticose. Leaves smooth, palmately five-cleft, with bipinnatifidly-cleft segments; upper ones three-parted. Peduncles opposite, erect, smooth. (*G. Don.*)

Description, &c.—This species is very ornamental, as well from its bright crimson, or rather rose-coloured flowers, as from its very handsome leaves, which closely resemble those of the garden Anemone in shape. It is a native of Madeira and Teneriffe, whence it was introduced in 1778. It flowers from May to September, and as it ripens its seeds freely, it is an excellent plant to try to hybridise with some of the Pelargoniums. In fact, it is probably the parent of some of the new kinds which have been lately raised, and so much admired at the different flower-shows. It may be here observed, that it is always interesting to raise Geraniums and Pelargoniums from seeds, as they vary a good deal, even when no trouble is taken with them, and the fertilisation of the seed is left to Nature. When, however, it is wished to raise regular hybrids, the stamens should be cut off the plant which is intended to produce the seed before the cells of the anthers have burst. The flowers of the other parent of the hybrid should then be watched, and as soon as the cells of the anthers burst, and the fine dust called the pollen appears, the stigma of the seed-bearing plant should be dusted with it, and the plants raised from the seed produced will be a cross between the two. Some persons apply the pollen with the point of a pen-knife, or with a camel-hair pencil; and others merely tie a truss of flowers producing the pollen, to the seed-bearing plant, leaving the fertilization to Nature. Whatever means may be taken to produce hybridisation, the seed-vessels which have been fertilised should be marked by a piece of coloured thread being tied round the stem of the plant, just below the truss of flowers.

2.—GERANIUM CANESCENS. THE WHITISH-LEAVED GERANIUM.

Specific Character.—Stems trailing. Leaves hoary beneath, five-parted, with oblong deeply-toothed segments. Peduncles very long, and clothed as well as the calyxes with glandular hairs. Petals emarginate. (*G. Don.*)

Description, &c.—There are two species, the one called *G. canescens*, and the other *G. incanum*, which appear to be very nearly the same, though the flowers of *G. incanum* are said to be white, and those of the present species are pink. Both kinds differ from the generality of Geraniums in having long trailing stems, and in the leaves being covered with a hoary pubescence, which is seldom found in any but the hardy kinds

OTHER SPECIES OF GERANIUM.

G. MULTIFIDUM *Sweet.*

The stem of this plant is very much branched, and the leaves deeply cut; they are silky and white beneath. The petals are rose coloured, and bearded at the base. The plant is a native of the Cape of Good Hope, whence it was introduced in 1825.

The genus *Erodium* has only two or three of what are called greenhouse species, and even those are so nearly hardy, as to be very seldom thought worthy of being grown in a greenhouse.

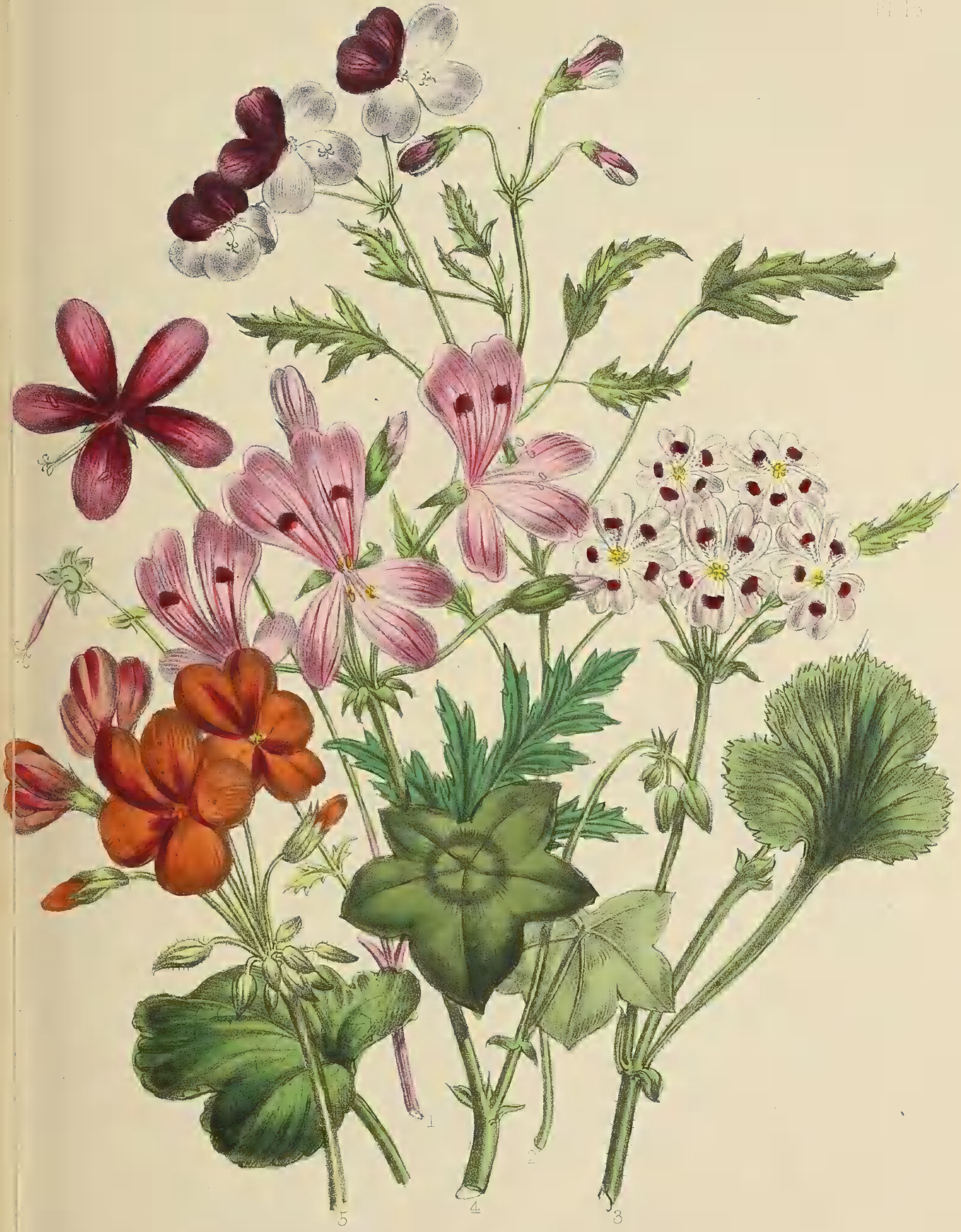
GENUS IV.

PELARGONIUM *L'Her.* THE STORK'S-BILL.

Lin. Syst. MONADELPHIA TETRA-HEPTANDRIA.

Generic Character.—Calyx five-parted; upper segments ending in a spur, or slender nectariferous tube, running down the peduncle, and adnate to it. Petals five, rarely four, more or less irregular. Filaments ten, four or seven of which are fertile, the rest sterile. Beaks or styles bearded inside, and spirally twisted at maturity. (*G. Don.*)

Description, &c.—This genus is divided into fourteen sections, eleven of which are so distinct as to be considered by many botanists as distinct genera. In addition to the great number of distinct kinds included in these sections, innumerable hybrids, or garden varieties as they are called, have been raised, the names of which it is impossible to record, as they are perpetually changing; every gardener not only having names of his own, but raising fresh plants every season, and losing others from accidental deaths, or the plants degenerating in course of



1 *Geranium anemonefolium.* 2 *Pelargonium tricolor L.*
3 *Pelargonium crassicaule* 4 *Pelargonium peltatum.* 5 *Pelargonium zonale L.*

cultivation. Nearly all the proper species of the genus Pelargonium are natives of the Cape of Good Hope, but hybrids have been raised from them in almost every country where the art of floriculture is known. As the sections are very distinct, I shall take them separately, and give the sectional character to each. The genus is named *Pelargonium* from the Greek word *Pelargos*, a stork, from the carpels bearing some resemblance to the head and beak of the stork. All the plants belonging to this genus are distinguished from the true Geraniums by the upper segments of the calyx ending in a slight spur or slender tube, adhering to the footstalk of the truss of the flowers. This, in some of the sections, is so very slight as to be scarcely perceptible ; but in the true Pelargoniums, which include nearly all the ornamental plants found in our greenhouses, it is very perceptible.

SECT. I.—HOAREA.

Sectional Character. — Petals five, rarely four, lanceolate or linear; two upper ones parallel, with long claws, abruptly reflexed in the middle. Stamens ten, in a long tube, which is the length of the lower sepals ; four or five of the stamens fertile, the rest sterile, and shorter than the fertile ones.

Description, &c.—The species belonging to this division have all tuberous, or rather turnip-like, roots, from which rise a tuft of leaves on long footstalks, and a tuft of flowers, also on a long footstalk, but without any proper stem. These species were cultivated, and innumerable hybrids raised from them, about forty or fifty years ago, by Sir Richard Colt Hoare, at Stourhead in Wiltshire, and hence the section is very appropriately named in honour of that gentleman. Sweet, indeed, thought the plants so distinct that he formed them into a separate genus, and hence they are sometimes found so named in collections.

1.—PELARGONIUM INCRASSATUM *Sims.* THE FLESHY-LEAVED PELARGONIUM.

Synonyme.—Geranium incrassatum *Andr.*
Engravings.—Bot. Mag., t. 761 ; Bot. Rep., t. 246.

Specific Character.—Leaves pinnatifid, with lobed obtuse segments. Scape a little branched. Superior petals obcordate. (*G. Don.*)

Description, &c.—This is a very handsome species, and from the flower-stem being branched, two or more trusses, of eight or ten flowers in each, are produced from one root. The flowers have the three lower petals of a pale pink, and the upper petals of a dark rose-colour, very much veined. The leaves are glaucous and very fleshy. Like all the tuberous-rooted Pelargoniums it is rather tender, and very difficult to propagate. It was first described and figured in 1801, but it does not appear certain whether it was introduced from the Cape of Good Hope, or raised from seed in this country ; but the former is probably the case, as it is always classed as a distinct species

2.—PELARGONIUM NUTANS *Dec.* THE NODDING-FLOWERED PELARGONIUM.

Synonymes.—P. rapaceum *var.* luteum *Sims*; P. rapaceum *Jacq.*; Geranium prolificum *Lin.*; G. selinum *Andr.*; G. africanum *var.* luteum *Com.*; Hoarea carinata *Sweet.*
Engravings.—Bot. Mag., t. 1877; Bot. Rep., t. 239; *Sweet's* Geraniaceæ, t. 135.

Specific Character.—Leaves bipinnate, hairy; leaflets bipinnatifidly jagged, multifid, linear, rather toothed. Umbels capitate, crowded, depressed. Flowers nodding; superior petals refracted inferior ones concave, connivent.

Description, &c.—This very singular species has pale yellow flowers and curiously cut leaves, which take somewhat of a yellow tinge in autumn. It is a native of the Cape of Good Hope, whence it was introduced in 1788 ; but as it is somewhat difficult to propagate, it is probably now lost.

There are numerous other species belonging to this section, and about forty named hybrids and varieties, but they are now seldom seen in collections, as they are generally not only inferior in beauty to the common Pelargonium, but much more difficult to propagate.

SECT. II.—DIMACRIA.

Sectional Character.—Petals five, unequal, two upper ones conniving, divaricate at the apex. Stamens shorter than the sepals, five of which are fertile, the two lowest ones twice the length of the rest, stretched out, upper ones shortest, the five sterile ones very short, and nearly equal.

Description, &c.—The species included in this section are stemless herbs, with turnip-like roots, and the flower-stems proceeding from tufts of leaves. They are mostly natives of the Cape of Good Hope, only a few hybrids having been raised in this country. *Dimacria* signifies twice as long, and alludes to two of the fertile stamens being twice as long as the rest. This section was made a genus by Sweet.

SECT. III.—OTIDIA.

Sectional Character.—Petals oblong-linear, nearly equal, about double the length of the calyx, two superior ones auricled at the base on the upper side. Stamens ten, erect, five of which are antheriferous, two upper ones of these spatulate or awl-shaped, three lower ones shortest, the three lower sterile ones erect or uncurved. Stems shrubby, fleshy. Leaves alternate, pinnate, fleshy. Flowers white. (*G. Don.*)

Description, &c.—Though this is a small section, several of the species contained in it are still to be found in old greenhouses. They are not remarkable for the beauty of their flowers, but they are curious and grow rapidly. All the species have stems, but they are short and fleshy, and frequently warted or tuberous at the base. The flowers are small and white. Two of the species are figured in the "Botanical Magazine," viz. *P. ceratophyllum*, t. 315, and *P. dasycaulon*, t. 2029. This is one of the sections that was made a genus by Sweet. The word *Otidia* signifies an ear, in allusion to the two upper petals being auricled at the base.

SECT. IV.—CAMPYLIA.

Sectional Character.—Petals five, unequal; the two upper ones largest, somewhat auricled at the claw. Filaments ten, hairy or pubescent; five fertile ones erect, five alternate ones sterile; the two upper ones of these longer than the others, and hooked at the apex. (*G. Don.*)

Description, &c.—The plants contained in this section, which was another of Sweet's genera, are now very rarely to be met with. They were principally half herbaceous, with rather small purplish flowers. The word *Campylia* is derived from the Greek *campylos*, a curve, in allusion to the two upper filaments being hooked.

SECT. V.—PHYMATANTHUS.

Sectional Character.—Petals five, unequal, two superior ones warted at the claws. Stamens ten, in a short tube, the five fertile ones recurved, and the five sterile ones straight, all pilose or pubescent. (*G. Don.*)

Description, &c.—Though there are only two species included in this section, it is perhaps better known than any of the others, as both the species are still frequently seen in greenhouses and at flower shows. It is probable, indeed, that one of the species is only a variety of the other. This section also was made a genus by Sweet. *Phymatanthus* is from two Greek words, signifying a warted flower, in allusion to the warted claws of the petals.

3.—PELARGONIUM TRICOLOR *Curt.* THE THREE-COLOURED PELARGONIUM.

Synonymes.—Geranium violaceum *Jacq.*; G. tricolor *Andr.*; Phymatanthus tricolor *Sweet.*

Engravings.—Bot. Mag., t. 240; Sweet's Geraniaceæ, t. 43, and our *fig.* 2, in Pl. 15.

Specific Character.—Stem erect. Leaves lanceolate, villously canescent, deeply toothed, or jagged. Peduncles usually three-flowered; upper petals short, warted at the base; lower ones oval. (*G. Don.*)

Description, &c.—Though this plant is popularly known as *Pelargonium tricolor*, it has, in fact, only two distinct colours, and these are deep red and clear white. The two upper petals, which are red, have, however, a dark stain at the base, which is considered to make up the three colours. This species is more hardy than the tuberous-rooted kinds, but hardly so much so as the Pelargoniums commonly found in greenhouses. *P. tricolor* was raised from seeds received from the Cape of Good Hope in 1791.

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OTHER SPECIES BELONGING TO SECT. V.

P. ELATUM *Sweet.*

This plant differs principally from the preceding species in growing much higher, and in the upper petals of the flowers being of a paler hue. Four hybrids were raised from this species by Sweet, and they appear, from the figures he has given of them, to have been ornamental; but they are all now lost to our gardens.

SECT. VI.—GRENVILLEA.

Description, &c.—This section contains only one species, which was named in honour of Lady Grenville. There are only four fertile stamens, and five petals; the two upper ones on long claws, and much larger than the three lower ones, which are very small. The plant is tuberous-rooted, and has simple leaves. The flowers are of a pale blush, and the two upper petals have a dark spot in the centre of each.

SECT. VII.—SEYMOURIA.

Description, &c.—This section contains only two species, the flowers of both of which have only two petals, distinct at the base, and abruptly reflexed in the middle. There are five stamens, all of which are fertile, and which grow together into a long straight tube. They have no stems, but turnip-like roots. The flowers of both species are purple. The section is named in honour of the Hon. Emily Seymour.

SECT. VIII.—JENKINSONIA.

Sectional Character.—Petals four or five, superior ones much larger than the rest, emarginate at the apex, streaked with lines. Stamens ten, ascending, spreading at the top, and pilose at the base, five or seven of which usually bear anthers, the sterile ones very short, and awl-shaped. (*G. Don.*)

Description, &c.—The species belonging to this section are partly shrubs, and partly herbaceous plants. The leaves are generally very much cut, and the flowers are ornamental. In their botanical construction they vary considerably, some having four petals, and some five, and either five or seven anthers. The section is named in compliment to Mr. Jenkinson, but it was one of Sweet's genera.
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4.—PELARGONIUM QUINATUM *Curt.* THE FIVE-FINGERED PELARGONIUM.

Synonymes.—Geranium præmorsum *Andr.*; Jenkinsonia quinata *Swt.*

Engravings.—Bot. Mag., t. 547; Bot. Rep., t. 150; Sweet's Ger., t. 79.

Specific Character.—Stem shrubby, flexuous. Leaves pubescent, palmately five-cleft; lobes cuneated, three-toothed at the apex. Peduncles one or two-flowered. Stamens pilose at the base. Nectariferous tube twice the length of the large calyx. Superior petals emarginate. (*G. Don.*)

Description, &c.—This very curious plant has large handsome flowers, though not at all like what we generally see on Pelargoniums, and the leaves are cut into five distinct finger-like lobes. The stem is very slender, and of a beautiful pink tinge. The species was raised from seeds imported from the Cape in 1793. The flowers are cream-coloured, the upper part being marked with dark simple veins. The plant forms a shrub from one to two feet high.

SECT. IX.—CHORISMA.

Description, &c.—There is only one plant in this section, which was included by Sweet in the genus *Jenkinsonia.* The stems are square and fleshy; and the stamens are joined into one long tube, which is jointed in the middle. The flowers are rather pretty, but the peculiarity of the plant is its square fleshy stem, which sometimes appears broad and flat, as if winged. *Chorisma* is from two Greek words signifying a separation, in allusion to two of the stamens being free and separate from the rest.

SECT. X.—ISOPETALUM.

Description, &c.—There are only two species in this division, and neither of them is remarkable for its beauty. *Isopetalum* is from the Greek, and signifies equal petals, the petals of the flowers being equal.

SECT. XI.—CICONIUM.

Sectional Character.—Petals five, two superior ones approximate, short, and narrow, or nearly equal between themselves. Stamens ten, seven or five of which bear anthers, two upper ones of these very short, three or five sterile. (*G. Don.*)

Description, &c.—The plants belonging to this section are generally well known in gardens, and most of them have produced hybrids handsomer than the true species. The section is subdivided into those that have large oval petals, nearly equal in size, but with the upper two beautifully veined; and those which have the petals all of one colour, as in the Common Scarlet Pelargonium. All the species are erect and shrubby. *Ciconium* is from *ciconia*, a stork, in allusion to the shape of the seed-vessels.

Subsect. 1.—*Petals sub-oval, nearly equal.*

P. LATERITIUM *Willd.*

This species has cordate five-lobed hairy leaves, and large umbels of brick-red flowers, which are produced in succession from May till September. The plant was raised in 1800, and it forms a shrub about two feet high.

P. MALVÆFOLIUM *Jacq.*

A very handsome species, with the stem shrubby at the base. The petals are flesh-coloured, reticulated with darker veins. The nectariferous tube is scarcely to be perceived. The species was introduced in 1812.

SUBSECT. 2.—*Petals of one colour. Stems shrubby, fleshy.*

5.—PELARGONIUM ZONALE *Willd.* THE HORSE-SHOE PELARGONIUM.

SYNONYME.—Geranium zonale *Lin.*

ENGRAVING.—Our *fig.* 5, in Pl. 15.

SPECIFIC CHARACTER.—Leaves cordate, orbicular, obsoletely lobed, toothed, zonate above. Peduncles many-flowered. Petals wedge-shaped. (*G. Don.*)

DESCRIPTION, &c.—The Horse-shoe Pelargonium is so called in reference to a dark mark on its leaves, somewhat in the shape of a horse-shoe: its flowers are of a brilliant scarlet. It is a native of the Cape of Good Hope, whence it was introduced in 1710; and when kept in a greenhouse, or room, it will continue in flower from April till December. Under favourable circumstances, it will form a shrub from three to six feet high, particularly if trained against a wall. Under other circumstances, it may be planted out in flower-beds, where it is highly ornamental, from its masses of bright scarlet flowers. The plant ripens seeds freely, and it may be propagated easily by cuttings.

OTHER SPECIES BELONGING TO SECT. XI.

P. INQUINANS *Ait.*

This species differs very little from the last in the flowers, but it is easily known by the leaves, which have no black mark upon them, and are covered with a soft down. The juice from the stem, when cut, will also stain the fingers of a brownish colour, and turn a steel knife black. A great many hybrids have been raised between this and the common horse-shoe, the flowers of which are of various shades of crimson and scarlet, and which bear the names of the places at which they have been raised. The Variegated-leaved Pelargonium, the leaves of which are not only white round the edge, but curved and wrinkled, is supposed to be a variety of this species; but the flowers, which are small, and of a pale crimson, are very inferior in beauty. All the scarlet-flowered Pelargoniums were introduced nearly about the same time, viz. from 1710 to 1714, but the hybrids from them have been raised at different times, and fresh ones are still continuing to be raised by those gardeners who take an interest in such matters.

There are several other species and varieties in this section, but they are seldom seen in British greenhouses.

SECT. XII.—POLYACTIUM.

There is only one species in this division (*P. multiradiatum*). It has a tuberous root, and nearly black flowers, which are produced in such abundance that each umbel has from twenty to thirty. The leaves are deeply cut and hairy. The name given to this section signifies many-rayed, in allusion to the numerous flowers.

SECT. XIII.—PERISTERIA.

The species contained in this division are all herbaceous trailing plants, many of which are natives of New Holland, and the flowers of which are generally white spotted with red. They are all greenhouse plants, but are now very seldom seen in collections. *Peristeria* is from a Greek word, signifying a dove, in allusion to the leaves of some of the species bearing a resemblance to those of the common Dove's-foot Geranium.

SECT. XIV.—PELARGONIUM.

Sectional Character.—Petals five, unequal; two upper ones approximate. Stamens ten, unequal, seven of which are antheriferous; the three sterile ones being awl-shaped.

Description, &c.—As this section contains nearly all the most ornamental species of Pelargonium, it may perhaps be well here to say a few words on the general culture of these well-known plants. The usual mode of treating them is to make cuttings of them in the open border about the middle of July, in a situation fully exposed to the mid-day sun. In about six weeks the cuttings will be rooted, and they should be then potted into the smallest sized pots. After potting they should be placed in a shady situation for a few days, after which they may be fully exposed to the sun and air till the end of September, when they should be housed for the winter. They are at this time shifted into larger pots, the soil being loam, chopped turf, if it can be procured, and sand. When the plants have been potted, the shoots should be cut off at the third or fourth joint from the base. After this shifting only a little air is given for about eight or ten days, after which the plants are allowed as much air as the season will permit till about the beginning of December, when the plants are again shifted into larger pots, and again stopped, by having the tops of the shoots taken off. The temperature of the greenhouse is kept at about 45°, but at the end of about ten days, it may be allowed to fall a little lower. About the middle of February, the plants intended for large specimens are again shifted into larger pots, and, at this time, each shoot is tied separately to a proper stake. By this treatment the plants will acquire a very large size, and produce an immense quantity of blossoms; but where they are not required for show plants, the cuttings may be put into large pots and kept in a cold pit during the winter; after which they should be potted off in February, and then plunged into a hot-bed till they have struck fresh roots; observing that while they are in the hot-bed, they should have very little water, as they are rather apt to damp off. When they appear sufficiently strong, they should be re-potted and set within the frame, but not plunged; and thence they may be removed to the greenhouse, where they should be kept near the glass, and well syringed over-head twice or three times a week till they have formed their flower-buds. In April or May they will probably begin to flower, and if the season is mild they may be planted out in the open ground, where, if they are watered every evening, when the weather is dry, and syringed over-head two or three times a week, they will grow luxuriantly, and continue to produce abundance of flowers during the whole of summer and autumn. Cuttings should be taken from them, as before directed, in July or August, and the old plants may be left in the ground till they are killed by the frost, as they seldom flower well the second season after they have been grown in the open ground, and are very difficult to keep through the winter.

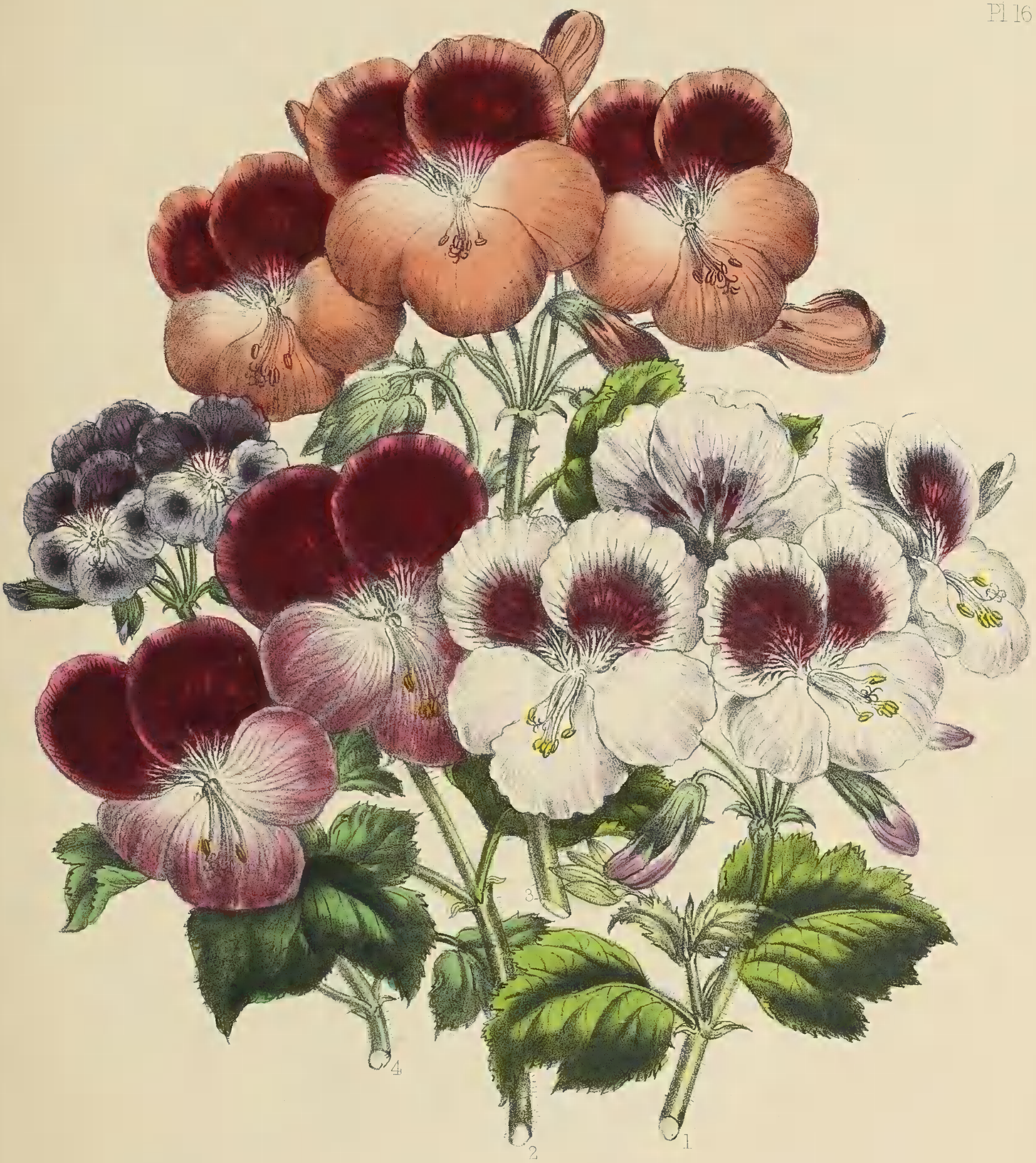
As there are above a hundred species of Pelargonium included in this section, besides innumerable hybrids and varieties, it will be impossible to give details of all of them, and I shall therefore confine myself to a few of those which are best known, and most distinct.

6.—PELARGONIUM TRISTE *Ait.* THE NIGHT-SMELLING PELARGONIUM.

Synonyme.—Geranium triste *Knorr.*
Engravings.—Bot. Mag., t. 1641; Sweet's Geraniaceæ, t. 85.
Specific Character.—Nearly stemless. Leaves hairy, pinnate; leaflets pinnatifid, with linear, acute segments. Umbels many-flowered. (*G. Don.*)

Description, &c.—The flowers of this species are of a very uncommon colour for Pelargoniums, as they are of a yellowish brown, streaked with dark purplish crimson. In the day-time they are entirely without smell, but

Pl 16.



Garden Varieties of Pelargonium.

1 *Large-flowered White* 2 *Gem* 3 *Sunrise* 4 *Anais.*

after sunset, and through the night, they emit a powerful odour, like that of some kinds of fruit. The species is tuberous-rooted, and it is propagated either by seeds or by cuttings of the root. There are several other species nearly allied to this, all with tuberous roots, but they are now very seldom grown; as they are not only inferior in beauty to the common kinds, but they are also much more difficult to cultivate. Some of them have been a long time in the country, as *P. triste* is said to have been introduced before 1632.

7.—PELARGONIUM BICOLOR *Ait* THE TWO-COLOURED PELARGONIUM.

Synonyme.—Geranium bicolor *Jacq.*
Engravings.—Bot. Mag., t. 201; Sweet's Geraniaceæ, t. 97.
Specific Character.—Stem suffruticose. Leaves cordate, trifid, waved, hairy, obtuse, toothed, lateral segments three-lobed, middle ones five-lobed; stipules kidney-shaped, entire. Umbels crowded, many-flowered. Calyx reflexed. (*G. Don.*)

Description, &c.—A very curious species, both in its leaves and flowers. It is still occasionally seen in old greenhouses, both in England and on the Continent, particularly the latter. The flowers are rather small, but they are usually of a very rich dark purplish crimson, edged with white; and the leaves are green, edged with dark purplish red. The plant was introduced in 1778. *P. pictum* bears considerable resemblance to this species, but the petals contain more white, and the leaves have not a dark margin.

8.—PELARGONIUM CRASSICAULE *L'Her.* THE THICK-STEMMED PELARGONIUM.

Synonyme.—P. primulinum *Sweet.*
Engravings.—Bot. Mag., t. 477; and our *fig.* 3, in Pl. 15.
Specific Character.—Stem fleshy, branched, smooth. Leaves kidney-shaped, rather acuminate, toothed, silky on both surfaces. Umbels many-flowered; bracteas four times shorter than the pedicels. Petals obcordate.

Description, &c.—The flowers of this species are very ornamental. The petals are white, with a blood-red spot in the middle of each, and the flowers smell like a Primrose. Both the leaves and stem are thick and fleshy, and the leaves are covered with a soft silky down on both sides. They are curiously plaited when young. This species was first discovered on the south-west coast of Africa, whence it was introduced in 1786. It requires a warm dry situation, and should be kept in a greenhouse all the year, as, from its root being tuberous, it is very apt to rot if the ground where it is placed is cold and damp. It is of very slow growth, and is propagated by cuttings, but with difficulty. It flowers in June and July.

9.—PELARGONIUM PELTATUM *Ait.* THE IVY-LEAVED PELARGONIUM.

Synonyme.—Geranium peltatum *Lin.* Engravings.—Bot. Mag., t. 20; and our *fig.* 4, in Pl. 15.
Specific Character.—Stem shrubby; branches fleshy, angular; leaves peltate, five-lobed, quite entire, fleshy. Umbels few-flowered. (*G. Don.*)

Description, &c.—The Common Ivy-leaved Pelargonium has pink or pale crimson flowers, but there is a variety the flowers of which are white. The leaves are like those of the common Ivy in form, and have generally a dark ring in the centre. They are what is called peltate, that is, the stalk springs from the centre of the back of the leaf. The plant is a native of the Cape of Good Hope, whence it was introduced in 1701. It was for many years comparatively neglected, but it has lately become popular, and has been grown occasionally as a show-flower. It will bear planting out quite well in the open air, and is, in fact, hardier than several of the other kinds.

OTHER SPECIES OF PELARGONIUM

P. RENIFORME *Curt.*

This is a very handsome species, though the flowers are rather small. They are of a purplish crimson; the upper petals are marked at the base with dark spots or streaks. The leaves are kidney-shaped.

P. TOMENTOSUM *Jacq.*

This plant bears considerable resemblance in its flowers to the common weed called Herb Robert. "It forms a large heavy bush, but, the branches being brittle, and the tops heavy, is very apt to be broken and disfigured by the wind. It is not remarkable for the beauty of its flowers; and the odour is too strong to be pleasant to many persons, though to others it is very agreeable, much resembling Penny Royal or Peppermint."

P. PULCHELLUM *Curt.*

The flowers of this plant are abundant and rather pretty, but it is principally distinguished by the stipules of the leaves, which are of a more firm and rigid texture than the leaf itself, and when it falls, they become brown, hard, and erect, looking like a small bunch of holly leaves.

P. PINNATUM *L'Her.*

This plant is extremely unlike a Pelargonium when not in flower, from its very curious pinnate leaves. It was introduced in 1797 from the Cape of Good Hope; but it appears now to be lost.

P. TERNATUM *Jacq.*

This species is distinguished by its ternate leaves and very rough stalks. The flowers, which are rose-coloured, are rather large and handsome, and they are produced in June and July. The plant is a native of the Cape of Good Hope, whence it was introduced in 1789.

P. ECHINATUM *Curt.*

This very handsome species is one from which several hybrids of the showy kinds now grown have been raised, particularly between it and *P. cucullatum*. The flowers of *P. echinatum* are white, with a dark red spot in each of the upper petals, but they vary exceedingly in plants raised from seed, some of which are crimson or even purple. This species is a native of the Cape of Good Hope, whence it was introduced about the year 1800. The flowers of *P. cucullatum* are very large, and of a dark purplish crimson, with still darker veins. Both species seed freely.

P. LOBATUM *Willd.*

A very singular species, with very large leaves and small flowers, the flowers being of a dark purple, with a narrow white margin round each petal. It is a tuberous-rooted species, and its tubers were sent from the Cape of Good Hope to Holland in 1698, where they were grown for some years before they were introduced into England.

P. GRAVEOLENS *Ait.*

This is the kind usually called the Rose-Scented Pelargonium, from its leaves, which are very much cut, having a strong but somewhat heavy fragrance resembling that of the Rose. The flowers are rather small, and not handsome; but the plant is still in general cultivation on account of the fragrance of its leaves.

P. QUERCIFOLIUM *Ait.*

This species bears considerable resemblance to the last, but the leaves have somewhat broader lobes, and there is an odour of turpentine mixed with the heavy fragrance of the leaves.

There are numerous other species described in books, but these species have been so repeatedly hybridised, and the hybrids again crossed and recrossed with each other, that it is now very difficult to know which are original species, or even what the species were from which the most popular hybrids have been raised.

HYBRID PELARGONIUMS.

In Sweet's work on the *Geraniaceæ*, above three hundred hybrids are named, described, and figured; and as Sweet's book was published above twenty years ago, there can be little doubt that as many more have been raised since that period; though, at the same time, there can be no doubt that many of those described by Sweet are now lost, and could not possibly be procured. In fact, as a continual succession of new kinds are produced, it is very seldom that any hybrid, however beautiful it may be, lasts longer than two or three seasons; and though there are some exceptions to the general rule, they are very few. *P. macranthon*, the Large-flowered White (see our *fig.* 1, in Pl. 16), is almost the only garden hybrid among all those named by Sweet which is still in general cultivation. The Gem (see our *fig.* 2. in Pl. 16) and the Bridesmaid were raised about 1840, and they are still common. The Sylph, which is somewhat older, and Sunrise (see our *fig.* 3, in Pl. 16), which was raised in 1842, were both introduced from Mr. Rendle's Nursery, at Plymouth; Sunrise having been raised by Mr. Lyne, a gentleman residing in that neighbourhood.

About the year 1845, some new kinds of hybrids were introduced of quite a different character to those which had been so long popular, and which have evidently for one of their parents some of those kinds which have all the petals alike. The most popular of these, *Anais* (see our *fig.* 4, in Pl. 16), is said to have been originated in France or Belgium. Another, called Queen Victoria, has the same general appearance, but the flowers are much lighter; while others, called *La Belle Africaine*, and *Statushii*, are so very dark as to be almost black. It is probable that many handsome hybrids might be raised between *P. tricolor* and some of the other species and varieties.

CHAPTER XXII.

TROPÆOLACEÆ *Juss.*

Essential Character.—Calyx five-parted, coloured, superior segment furnished with a free spur at the base; lobes sometimes free, sometimes joined together more or less. Petals five, inserted in the calyx, and alternating with its lobes, unequal, irregular; two superior ones sessile and remote, fixed in the mouth of the spur; three lower ones unguiculate, smaller, sometimes abortive. Stamens eight; filaments free, closely girding the ovary, inserted in the disk; anthers terminal, oblong, erect, two-celled, bursting by a double chink. Styles three, connected together into one, which is three-furrowed. Carpels three, adnate to the base of the style or axis of the fruit, one-celled, one-seeded. Seed large, without albumen, filling the cell, and conforming to the cavity. Embryo large; cotyledons two, straight, thick, younger ones distinct, but at length closely connected together, and also adhering to the spermoderm, but rather distinct at the base; radicle lying within the process of the cotyledons, bearing four tubercles, which at length become radicles. (*G. Don.*)

Description, &c.—All the plants belonging to this order are natives of South America; they are, indeed, all, excepting one, belonging to the genus Tropæolum. They are all very ornamental, and most of them may be grown in the open air during the summer months.

GENUS I.

TROPÆOLUM *Lin.* THE INDIAN CRESS.

Lin. Syst. OCTANDRIA MONOGYNIA.

Generic Character.—Calyx five-parted; upper lobe furnished with a spur. Petals five, unequal, three lower ones smallest, or vanished altogether. Stamens eight, free from the base. Carpels three, somewhat erose, kidney-shaped, indehiscent, furrowed, roundish. Seed large, filling the cell. (*G. Don.*)

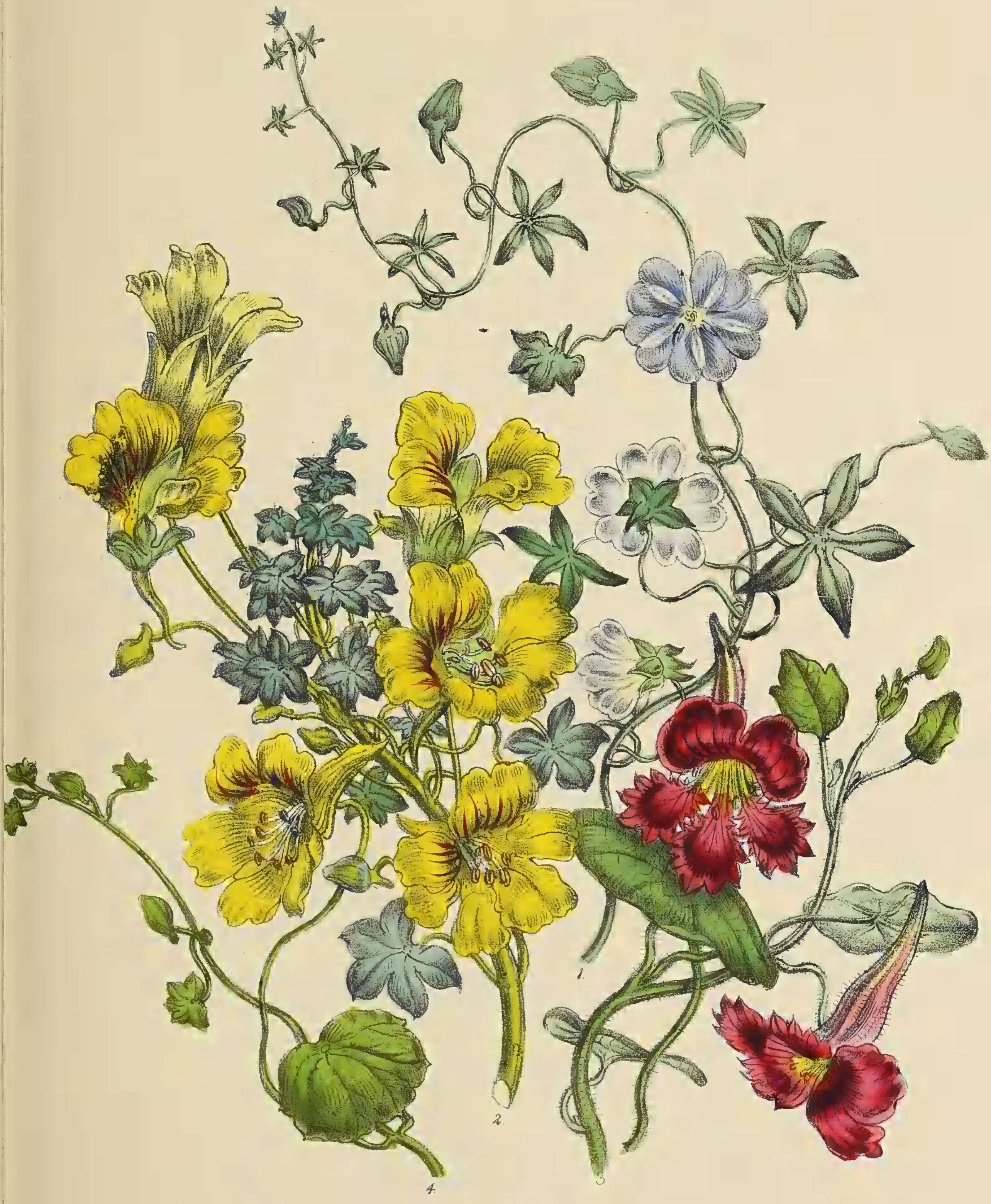
Description, &c.—All the species of Tropæolum have ornamental flowers, which are generally yellow, sometimes mixed with red, and in one species are of a beautiful light blue. They are all greenhouse perennials, but many of them may be grown as annuals in the open air. Some of them, however, have tuberous roots, and can only be grown either in frames or greenhouses. The leaves have generally a hot taste, like cress, and it is on this account that the common garden Tropæolum is popularly called the Nasturtium, *Nasturtium* being the botanic name for cress. It is singular that it is only in this order and in *Cruciferæ* that the peculiarly acrid flavour, so well known in cress and other cruciferous vegetables, is found to exist. The leaves of most of the species are what is called peltate, that is, the foot-stalk grows from the centre of the leaf on the under side. All the species have slender climbing stems, which require support. The word *Tropæolum* signifies a trophy, alluding to the arms of a vanquished warrior, the leaves being somewhat in the form of a buckler, and the flowers resembling an empty helmet. It will be observed, that in this genus it is extremely difficult to decide which should be called greenhouse plants, and which are to be considered hardy; since all the species, even the common garden Nasturtium, are, properly speaking, greenhouse perennials. It has been the custom, however, so long to consider some of the kinds as garden annuals, that it would appear quite ridiculous now to speak of them in any other light; and as even some of those which are tuberous-rooted will live in the open ground during the summer, they are frequently included in the lists of hardy plants. The following kinds, however, have, I believe, never been planted in the open air, and may, therefore, at present at least, be fairly considered as greenhouse plants; though in a few years, no doubt, they, or at least some of them, will share the fate of their elder brethren, and be found to succeed in the open air.

1.—TROPÆOLUM POLYPHYLLUM *Cav.* THE MANY-LEAVED TROPÆOLUM.

Engravings.—Bot. Mag., t. 4042; Paxt. Mag. of Bot., vol. x., p. 175; and our *fig.* 2, in Pl. 17.

Specific Character.—Stem prostrate. Leaves palmate-peltate, deeply cut into five or nine obovate lobes. Spur of the calyx drawn out and longer than the sepals. The upper petals longer than the others, and emarginate.

Description, &c.—The stem of this plant is succulent, and grows to the length of one or two feet. It is naturally prostrate, but it may be trained over a wire or frame in the same way as several of the other species. The stems are covered with immense quantities of glaucous leaves, and numerous flowers, which are yellow, streaked with red. The calyx is green, and rather small, but it ends in a very long, attenuated spur. The plant is a native of Chili, where it is found on both sides of the Cordilleras, and as it grows tolerably high up the mountains, it will probably prove as hardy as any of the other species of the genus. It was introduced in 1839.



1 *Tropæolum azuréum* 2 *Tropæolum polyphyllum*
3 *Tropæolum Lobbiánum* 4 *Tropæolum crenátiflorum.*

2.—TROPÆOLUM EDULE *Hort.* THE EATABLE TROPÆOLUM.

Engraving.—Paxt. Mag. of Bot., vol ix., p. 127.

Specific Character.—Stem climbing. Root tuberous. Leaves with long twisted petioles, digitate, peltate; leaflets linear-lanceolate, acute. Spur of the calyx elongated. Upper petals much larger than the others, emarginate. Filaments of the stamens recurved.

Description, &c.—This is a very distinct species, from the twisted footstalks of the leaves, and the narrowness of the leaflets. The tubers, when cooked, taste something like a very firm potato. The flowers are yellow, but they generally drop off before they expand, so that they are seldom seen excepting in the bud, when they have a deep greenish hue in the thick part, though the spur of the calyx, which is drawn out to some length, is of a bright orange-yellow. The plant is a native of Chili, and it was introduced about 1840.

3.—TROPÆOLUM AZUREUM *Miers.* THE BLUE TROPÆOLUM.

Engravings.—Bot. Mag., t. 3985; Bot. Reg. for 1842, t. 65; Paxt. Mag. of Bot., vol. ix., p. 247; and our *fig.* 1, in Pl. 17.

Specific Character.—Leaves five-lobed; segments linear, equal. Petals equal, bilobed, entire, much longer than the calyx. Spur of the calyx conical, shorter than the sepals.

Description, &c.—It was long supposed that it was impossible to have blue flowers in any genus where most of the species were either red or yellow. It has, however, been discovered that this supposition was incorrect, and in the year 1842 it so happened that two plants with blue flowers were introduced, belonging to genera of which all the species before known had either red or yellow flowers. One of these plants was the Blue Tropæolum, a native of Chili, where it was found growing on the mountains at the height of about four thousand feet above the level of the sea. The plant when not in flower resembles *T. brachyceras*, in the slenderness of its stem and its general habit of growth; but it is like *T. edule* in the shape of the leaves and their twisted footstalks. Since the plant was first introduced, it has been found to vary considerably in the colour and size of its flowers, some of them being of a deep violet colour, and others of a light azure blue.

4.—TROPÆOLUM LOBBIANUM *Hook.* MR. LOBB'S TROPÆOLUM.

Engravings.—Bot. Mag., t. 4097; and our *fig.* 3, in Pl. 17.

Specific Character.—Leaves orbicular, obscurely lobed, peltate, (lobes mucronate,) glaucous on the under side. Stem climbing, hairy. Spur of the calyx drawn out, hairy. Upper petals obovate, entire, or sub-lobed; lower ones much smaller, roughly toothed, fringed in the lower part, and on long slender claws.

Description, &c.—This very handsome species was found in Columbia by Mr. Lobb, collector to Messrs. Veitch, nurserymen, of Exeter, and it was sent home early in the year 1843. Its leaves, though at first sight they appear to bear considerable resemblance to those of the common garden Nasturtium, will be found, when closely examined, to be very curiously formed; being slightly lobed, and bearing small bristly points at the extremity of what would have been the lobes had they been fully developed. The flowers are of a flame colour, and at first sight look a good deal like those of the smaller garden Nasturtium; but when closely examined, they will be found to be much more curiously formed, particularly in the lower petals.

5.—TROPÆOLUM CRENATIFLORUM *Hook.* THE NOTCHED-FLOWERED TROPÆOLUM.

Engravings.—Bot. Mag., t. 4245; and our *fig.* 4, in Pl. 17.

Specific Character.—Very smooth. Leaves peltate, semi-orbicular, with a broad truncate base, five-lobed, lobes obtuse. Petals scarcely to be distinguished from the calyx, obovate, spreading, subequal, truncate at the apex, crenated. Spur attenuated, higher than the flower.

Description, &c.—This species is another of those found by Mr. Lobb in Peru, and it was introduced by him in 1846. The whole of the flower is yellow, except the extreme point of the spur, and the tip of each segment of the calyx. It is a long, straggling plant, with the flowers and leaves rather wide apart, and thus it forms a striking contrast to *T. polyphyllum*, the leaves and flowers of which are crowded together as closely as possible.

It appears, from the works of Ruiz and Pavon, that there are several other ornamental kinds of Tropæolum in South America which have not yet been introduced; and amongst others, one called *T. bicolorum*, which is said to have the upper petals of a bright yellow, and the lower ones of a brilliant scarlet.

The other genus included in the order Tropæolaceæ, is called *Magallana*, but it contains only one species, a climbing annual plant with ternate leaves and yellow flowers, which has not yet been introduced.

CHAPTER XXIII.

RUTACEÆ *Juss.*

Essential Character.—Calyx with four or five divisions, toothed, cleft or parted. Petals equal in number to the divisions of the calyx, and alternating with them, usually distinct, and longer than the calyx, rarely connected into a monopetalous corolla. Stamens sometimes equal in number with the petals, and alternating with them; sometimes double that number, with the alternate ones shortest. Filaments inserted in the gynophore, rarely beneath the hypogynous disk, and more rarely perigynous, or adhering to the bottom of the calyx, in consequence of the disk being joined with it; either naked or furnished with a scale at the base, free, very rarely connected at the base, or glued to the corolla, as in those with monopetalous flowers. Anthers two-celled, bursting lengthwise. Ovary free, with the cells equal in number to the petals, and opposite them, rarely fewer, verticillate; sometimes fixed around the common axis; sometimes distinct to the base, sometimes joined together. Ovulæ fixed to the central placenta, usually two in each cell or carpel, rarely one, or from four to twenty. Styles equal in number to the cells or carpels, usually connected together in one, or only connected at the base or top, rarely wholly distinct. Stigma of as many lobes or furrows as there are styles in those that are joined. Fruit sometimes simple, having [illegible] many valves as there are styles, with a dissepiment in the middle of each valve, dehiscent, but more usually with an equal number of two-valved separable carpels, rarely indehiscent, composed of many drupes or carpels. Sarcocarp thin, or more or less fleshy. Endocarp thin or woody, closely adhering to the sarcocarp, or separable from it into a two-valved elastic cocculum. Seeds fewer than the ovulæ from abortion, with a membranous, or usually with a testaceous, covering. Albumen fleshy or cartilaginously horny, rarely wanting. Embryo white or greenish, with a straight radicle pointing towards the top of the cells, rarely turned obliquely towards the hylum. Cotyledons of various forms. (*G. Don.*)

Description, &c.—This is a very extensive order, but the greater part of the plants contained in it have a very strong and disagreeable odour, which prevents them from being so generally cultivated as they otherwise would be from their ornamental flowers. The common Rue, and other species in the same genus, are almost the only plants in the order which are perfectly hardy; but there are numerous greenhouse plants belonging to it, which are natives of the Cape of Good Hope and New Holland. Nearly all the plants contained in the order are shrubs.

GENUS I.

DIOSMA *Berg.* THE DIOSMA.

Lin. Syst. PENTANDRIA MONOGYNIA.

Generic Character.—Flowers regular; petals five; disk adhering to the calyx; fertile stamens five, perigynous. Ovaries one to five, joined in one. Seeds covered with a thin shining testa, usually crested at the apex. Albumen very thin or wanting. Embryo with a short radicle and ovate cotyledons, not rarely multiple.

Description, &c.—All the plants contained in this genus are natives of the Cape of Good Hope, and they are all distinguished by a very strong fragrance, which appears to have been so agreeable to some of the older botanists that they named the genus from two Greek words signifying a divine smell. The Hottentot women at the Cape are also so partial to it that they make a kind of ointment from the bruised leaves, with which they anoint the body, and which they call *buku*. The genus Diosma has been divided by modern botanists into several new genera, but as the plants are still generally known by their old names, and as, indeed, the new names do not appear to have been generally adopted even by botanists, I have retained all the plants in their old genus, and have only noticed the other names given to them under the head of synonymes.

1.—DIOSMA UNIFLORA *Lin.* THE SINGLE-FLOWERED DIOSMA.

SYNONYMES.—Adenandra uniflora *Willd.*; Hartogia uniflora *Berg.*; Eriostemon uniflora *Smith.*; Cistus humilis *Pulk.*

ENGRAVING.—Bot. Mag., t. 273.

SPECIFIC CHARACTER.—Leaves scattered, oblong-lanceolate, somewhat pointed, revolute, smooth, dotted beneath. Flowers solitary, terminal. Calyx ciliated. Petals obovate. (*G. Don.*)

DESCRIPTION, &c.—This plant forms a small bushy shrub, the leaves of which are small and irregularly scattered over the branches quite up to the flowers, which are produced at the extremity of each shoot. The flowers are very large, being sometimes beyond the size of half-a-crown. The petals are white, with a streak of pink running down the middle of each; they are also pink on the under side, and consequently look very pretty in the bud, but when the flowers expand their beauty is somewhat injured by the petals being so far apart as to show the calyx between them. These flowers have no scent, but they are distinguished by a botanical peculiarity found in all the other species which Willdenow included in his genus *Adenandra;* and this is, that there are ten filaments, five of which are without anthers, but terminate in a thick concave or globose gland, the use of which is unknown; the other five bear anthers, which are large and egg-shaped. The species is a native of the Cape of Good Hope, whence it was introduced in 1775.

2.—DIOSMA ACUMINATA *Lodd.* THE POINTED DIOSMA.

SYNONYMES.—Adenandra acuminata *Sweet;* Agathosma acuminata *Willd.;* Bucco acuminata *Wendl.*

ENGRAVING.—Lodd. Bot. Cab., t. 493.

SPECIFIC CHARACTER.—Leaves scattered, roundish-ovate, rather cordate. Peduncles terminal, umbellate.

DESCRIPTION, &c.—The flowers of this species are large and white, with a pink stripe up each petal, as in the former species. This plant is, however, much more ornamental than *D. uniflora*, as the petals are not so far apart as in that species, and the calyx, instead of being a dingy green, is pink. The glands of the sterile stamens look like little shells. The leaves are much more dense than in the last species, and they have a strong smell, which, however, is not so disagreeable as in some of the other kinds of Diosma, as it is somewhat aromatic. The species is a native of the Cape of Good Hope, and was introduced in 1805.

3.—DIOSMA AMŒNA *Lodd.* THE PLEASING DIOSMA.

SYNONYMES.—D. ovata *Hort.;* Adenandra amœna *Sweet;* A. glandulosa *Lich.*

ENGRAVINGS.—Lodd. Bot. Cab., t. 161; Bot. Reg., t. 553.

SPECIFIC CHARACTER.—Leaves oval, glabrous. Flowers sessile, disposed in terminal umbels. Petals imbricate, nearly orbicular, terminating in a small mucrone.

DESCRIPTION, &c.—This is a very handsome species. The flowers are of a pale pink, with a dark pink streak up each petal, broader than in the other species; the back of the petals is of a deep rose colour. The flowers, as in all the other species of the genus, last a long time without fading after they have expanded; they are without scent, but the leaves have the strong smell peculiar to the genus. The species is a native of the Cape of Good Hope, and it was introduced in the year 1798.

4.—DIOSMA SPECIOSA *Sims.* THE SHOWY DIOSMA.

Synonymes.—D. cistoides *Lam.*; D. umbellata *Hort.*; D. rugosa *Donn*; Adenandra speciosa *Link.*

Engravings.—Bot. Mag., t. 1271; and our *fig.* 1, in Pl. 18.

Specific Character.—Leaves scattered, oblong or obovate, revolute, dotted beneath, smooth, but sometimes slightly fringed on the edges. Flowers terminal, umbellate. Calyx fringed, but petals with smooth margins. (*G. Don.*)

Description, &c.—This is perhaps the handsomest species of the genus. The flowers in colour and general appearance resemble those of *D. amœna*, but they are much larger and are in more numerous clusters. The leaves are also considerably larger and handsomer, and though they are still what botanists call scattered, that is, produced at irregular distances from each other, they cover the stem much better than those of *D. uniflora*, which are too far apart to be ornamental. The plant grows from a foot to eighteen inches high, and remains in flower a long time, the flowers beginning to expand about April, and continuing all the summer. The species was introduced in 1790, and it is one of the most commonly cultivated. It is necessary, however, to keep it in a greenhouse or balcony, as the flowers are apt to drop off without expanding if it is planted in the open ground. The pots in which the plants are kept should be well drained with potsherds broken very small and placed so as to fill nearly a quarter of the pot; and the soil should be a mixture of sand and peat. The plants should be watered every day when they are in flower or have flower-buds, but they should be kept nearly dry, so as to allow them a season of repose, when the flowers are over. The cuttings should be taken from the top of the shoots, and potted in pure sand with a bell-glass over them, in the same manner as is done with the cuttings of Heath.

5.—DIOSMA FRAGRANS *Sims.* THE FRAGRANT DIOSMA.

Synonyme.—Adenandra fragrans *Rœm. et Schult.*

Engravings.—Bot. Mag., t. 1519; and our *fig.* 2, in Pl. 18.

Specific Character.—Leaves scattered, spreading very much, ovate-oblong, glandular, a little crenulated; pedicels clammy, aggregate, umbellate, almost twice as long as the leaves. Calyxes reflexed. Petals crenulate. (*G. Don.*)

Description, &c.—This species differs from the others in the flowers being of a beautiful rose-colour, and not being terminal. They have also a very agreeable aromatic smell, and the leaves are handsome, being somewhat larger than those of the other species, and of a glossy green on the upper side. The flowers, though they are rather small, are also very ornamental, from their brilliant colour and their great abundance. The species was introduced in 1812, and, like the others, it is a native of the Cape of Good Hope.

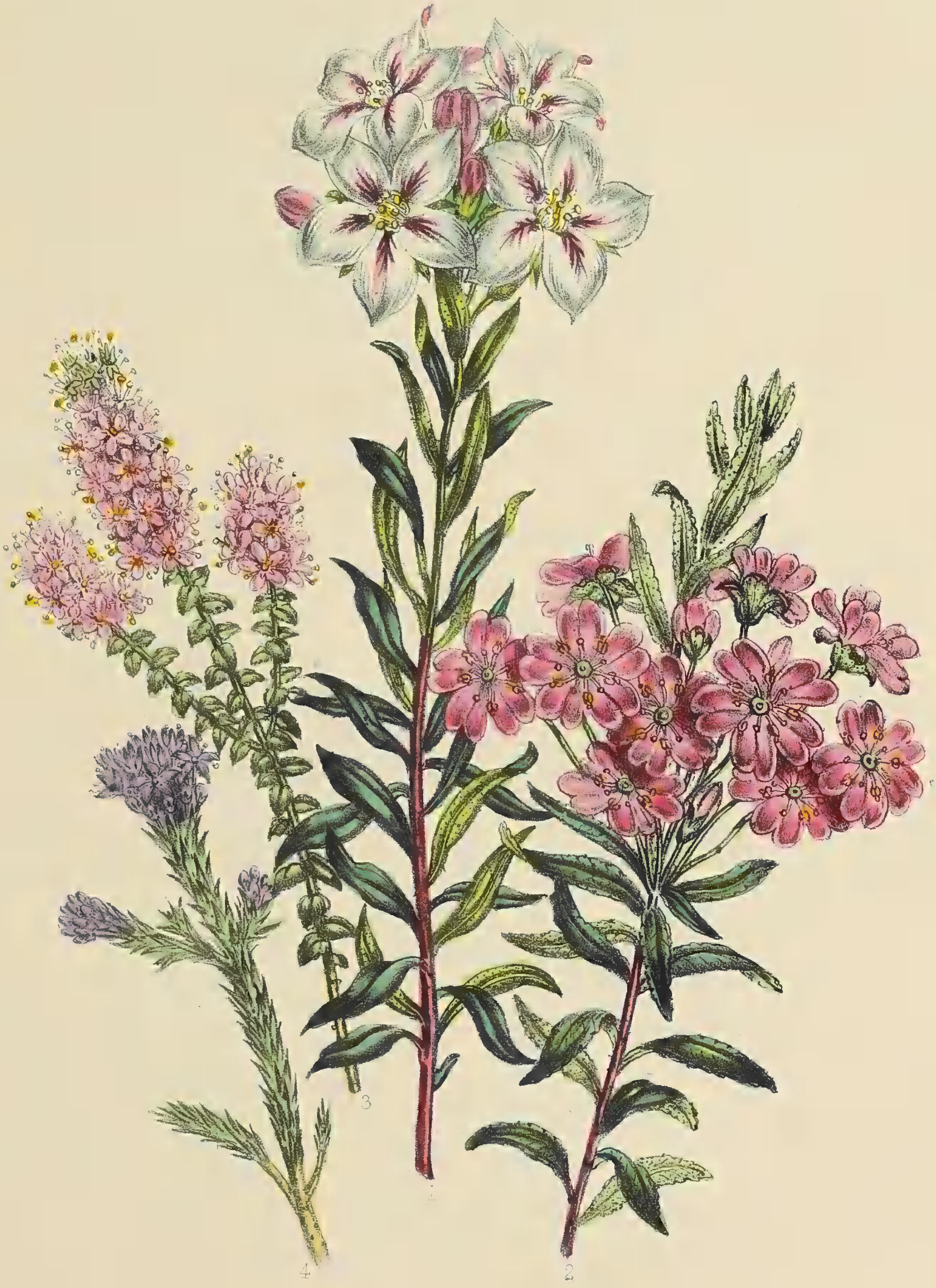
6.—DIOSMA PULCHELLA *Lin.* THE PRETTY DIOSMA.

Synonymes.—Hartogia pulchella *Berg.*; Bucco pulchella *Rœm. et Schult.*; Barosma pulchella *Wendl.*

Engravings.—Bot. Mag., t. 1357; and our *fig.* 3, in Pl. 18.

Specific Character.—Leaves crowded, ovate, quite smooth, with thickened, crenate-glandular margins. Peduncles axillary, usually solitary, exceeding the leaves. (*G. Don.*)

Description, &c.—Nothing can be more different than the general appearance of this plant from those which have been already described as belonging to the genus, as the flowers are small, and produced at the ends of the shoots in very great abundance. It is also more hardy than the other kinds, though, like them, it is a native of the Cape of Good Hope, whence it was introduced in 1789. The smell of this species is very disagreeable, and it remains so long, that if a nosegay containing it is held in the hand when a leather glove is on, the glove scarcely ever loses the scent. The Hottentots are said to be particularly fond of the leaves of this plant, which, when dried and powdered, they mix with grease to make their buku; and when they have anointed themselves with it,



1 Diosma speciosa 2 Diosma fragrans.
3 Diosma pulchella 4 Diosma hirta

it gives them so rank an odour, that Thunberg says he could not endure the smell of the men who drove his waggon, and that he was obliged to keep so far from the party, on this account, as to be sometimes exposed to considerable inconvenience.

7.—DIOSMA HIRTA *Vent.* THE PURPLE DIOSMA.

Synonymes.—D. purpurea *Hort.*; D. Ventenatiana *Spreng.*; D. glandulosa *Thunb.*; Agathosma lasiophylla *G. Don*; Bucco Ventenatiana *Rœm. et Schult.*

Engravings.—Bot. Reg., t. 369; and our *fig.* 4, in Pl. 18.

Specific Character.—Leaves imbricate, linear-lanceolate, incurved at the apex and bluntish, hairy beneath. Branches a little whorl. Pedicels unequal, short, pubescent. Calyxes smooth. (*G. Don.*)

Description, &c.—This species, when not in flower, has very much the appearance of the kind of heath called *Erica vestita*, as the branches are completely clothed by the imbricated leaves. The flowers are produced in clusters at the ends of the shoots; they are small, and of a bright purple. The plant is a native of the Cape of Good Hope, whence it was introduced in 1794. It requires the same treatment as directed for *D. speciosa.*

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OTHER SPECIES OF DIOSMA.

D. RUBRA *Lin.*

A little heath-like plant, with very small flowers, which are sometimes purple edged with white, and sometimes white. It is a tolerably hardy greenhouse shrub, and when planted in the free ground of a conservatory, it grows three or four feet high, and looks somewhat like a juniper bush. It was introduced about 1752. It is a true Diosma, and has the strong smell common to the genus.

D. ERICOIDES *Lin.*

A little plant, with very small white flowers. The leaves of this plant are said to have a more delicate fragrance than those of some of the other species, and they are so highly prized by the Hottentot ladies for making a superior kind of buku, that it is said that a thimbleful of the dry leaves in powder is reckoned equal in value to a sheep. The species was introduced in 1756, but is very seldom grown as it does not possess any beauty.

D. CUPRESSINA *Lodd.*

A very slow-growing little plant, rarely exceeding a foot in height, with white flowers, and small leaves clothing the stem. It has very little odour.

D. SERRATIFOLIA *Lodd.*

Rather a pretty-looking plant, with white flowers and large red anthers. The leaves are rather large for the size of the plant, and they are sharply serrated at the margin. It is one of the most ornamental of the small plants belonging to the genus. It is sometimes called *Barosma serratifolia.*

There are many other species belonging to the genus, but those which have been enumerated are the kinds most commonly seen in greenhouses.
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GENUS II.

BORONIA *Smith.* THE BORONIA.

Lin. Syst. OCTANDRIA MONOGYNIA.

Generic Character.—Calyx four-parted or four-cleft, permanent. Petals four, marcescent. Stamens eight, the four opposite the petals shortest, all shorter than the petals, free, fringed or tubercled, linear, usually dilated at the top, whence a very short thread rises, bearing the anther; anthers heart-shaped, usually with a short appendage at the apex. Styles four, erect, smooth, approximate or joined together, terminated by an equal or capitate four-furrowed stigma. Fruit of four two-valved carpels. Seeds ovate, compressed, usually one in each carpel. (*G. Don.*)

Description, &c.—The plants contained in this genus are all natives of Australia, and they require a greenhouse in this country. They are shrubs, generally from one to four feet high, with flowers of some shade of purple, and having an agreeable fragrance. The genus is named in honour of Francis Borone, Dr. Sibthorp's Italian servant, who assisted him in collecting specimens of most of the plants figured in the "Flora Græca," and who lost his life at an early age, by an accidental fall at Athens. It is singular enough, that this young man, before he entered into the service of Dr. Sibthorp, had attended Professor Afzelius in a botanical expedition to Sierra Leone, and, from his indefatigable zeal and singular acuteness, he had made such rapid progress in the knowledge of plants, that had his life been spared a few years longer, there is no doubt he would have become a most excellent botanist.

1.—BORONIA PINNATA *Smith.* THE PINNATE-LEAVED BORONIA.

Engravings.—Bot. Rep., t. 58; Bot. Mag., t. 1763; Lodd. Bot. Cab., t. 473.

Specific Character.—Leaflets two, three, four pairs, linear, acute, quite smooth. Peduncles dichotomous. Flowers octandrous. (*G. Don.*)

Description, &c.—A very pretty little plant, with very slender leaves and pretty pink flowers, which sometimes take somewhat of a purplish tinge. It is a native of Australia, near Port Jackson, and it was introduced in 1794. The flowers smell like the Hawthorn.

2.—BORONIA SERRULATA *Smith.* THE SAW-LEAVED BORONIA.

Engravings.—Bot. Reg, t. 842; Lodd. Bot. Cab., t. 998; Sweet's Flora Austriaca, t. 19; and our *fig.* 1, in Pl. 19.

Specific Character.—Leaves trapeziform, acute, serrulated in front, smooth, full of glandular dots. Peduncles aggregate, terminal. (*G. Don.*)

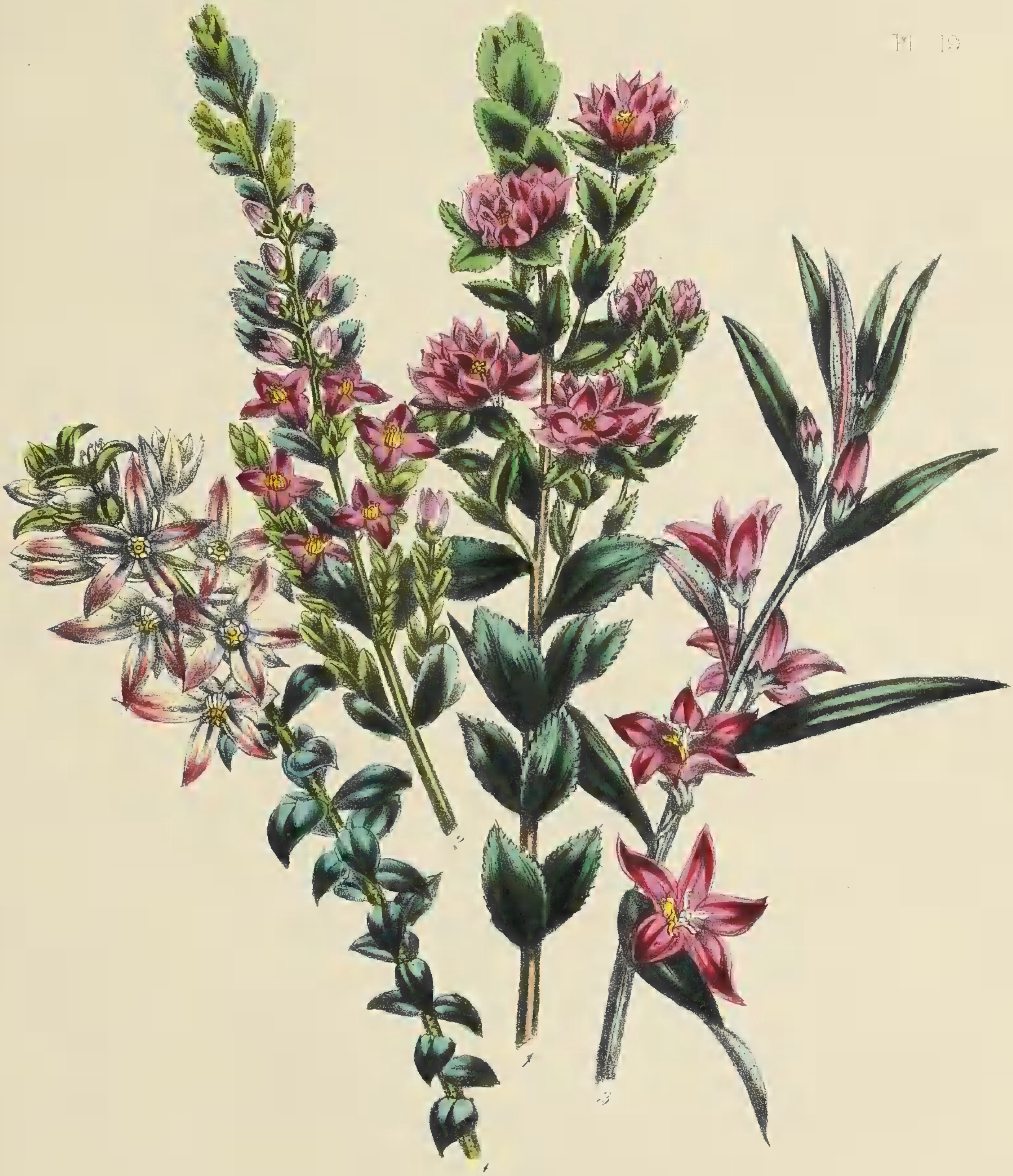
Description, &c.—For many years the Boronia pinnata was the only species of the genus known in this country, and Boronia serrulata has not the honour of even being second, as, in fact, it was not sent to England till about 1820, when some of its seeds were received from the neighbourhood of Port Jackson, and raised in this country. It forms a densely leafy bush, with bright rose-coloured flowers, which have a fragrance somewhat like that of the rose. It is a free-growing plant, and in the ground of a conservatory will grow four or five feet high, but it is very inferior in beauty to *B. pinnata,* as it has neither the lightness nor the elegance of that very pretty plant.

3.—BORONIA CRENULATA *Smith.* THE CRENATED BORONIA.

Engravings.—Bot. Mag., t. 3915; Bot. Reg., for 1838, t. 12; and our *fig.* 2, in Pl. 19.

Specific Character.—Leaves obovate, mucronulate, crenulated. Pedicels axillary, terminal, one-flowered. Filaments obtuse, glandular at the apex. (*G. Don.*)

Description, &c.—This species is a native of King George's Sound, whence specimens were brought home by the late Mr. Menzies upwards of fifty years ago, though the living plant was not introduced till 1837. The flowers



1. Boronia serrulata 2. Boronia crenulata
3. Crowea saligna 4. Eriostemon buxifolium

are rose-coloured, and the plant forms a neat deep-green bush. It should be kept in an airy part of the greenhouse, but not exposed too much to the sun in summer. It is generally multiplied by cuttings, which should be taken off in April or May.

OTHER SPECIES OF BORONIA.

B. DENTICULATA *Smith.*

An elegant little plant with round branches, slender leaves, and an abundance of pink flowers. It is a native of King George's Sound, in New Holland, whence it was introduced in 1825.

B. ALATA *Smith.*

A very curious plant with pinnate leaves, the footstalks of which are winged. It is a native of the west coast of New Holland, and is a strong upright shrub, with square branches and stems. The flowers are pink, slightly tipped with green.

There are several other species, but they are very little known.

GENUS III.

CROWEA *Smith.* THE CROWEA.

Lin. Syst. DECANDRIA MONOGYNIA.

Generic Character.—Calyx five-parted, permanent. Petals five, sessile. Stamens ten, the five opposite the petals shortest, all shorter than the petals, linear, fringed, lying close together so as to form a tube; anthers oblong, cordate, adnate, drawn out at the apex into a long, bearded appendage. Style five-furrowed, smooth, terminated by a capitate, five-furrowed stigma. Fruit of five-jointed, one-seeded carpels. (*G. Don.*)

Description, &c.—There are only two species in this genus, and they are both shrubs with lanceolate leaves, full of pellucid dots. The branches are three-cornered, and the flowers are convolute in the bud.

1.—CROWEA SALIGNA *Andr.* THE WILLOW-LEAVED CROWEA.

Engravings.—Bot. Mag., t. 989 ; Bot. Rep., t. 79 ; and our *fig.* 3, in Pl. 19.
Specific Character.—Stem three-cornered. Leaves alternate, lanceolate, entire. Flowers solitary, axillary.

Description, &c.—This very pretty plant is a native of New Holland, whence it was introduced in the year 1790; and it has almost ever since that period (now nearly sixty years) been a favourite plant in greenhouses and balconies. It is very nearly hardy, and only requires to be protected from frost during winter; and, in fact, it flowers better when it is allowed plenty of free air during the summer months, than when it is kept in a very warm situation.

OTHER SPECIES OF CROWEA.

C. LATIFOLIA *Lodd.*

This species differs from the last, principally in having broader leaves. The flowers have also more of a purple tinge. It was introduced in 1824. Both species, when kept in a greenhouse, flower from July till December

GENUS IV.

ERIOSTEMON *Smith.* THE ERIOSTEMON.

Lin. Syst. DECANDRIA MONOGYNIA.

Generic Character.—Calyx five-parted, permanent. Petals five, marcescent as well as the stamens. Stamens ten, the five opposite the petals shortest, all shorter than the petals, free, flat, hispid, fringed, tapering to the apex into a thread, which bears the anthers; anthers heart-shaped, appendiculate at the apex. Style five-furrowed, very short, hispid or smooth, terminated by a capitate, five-furrowed stigma. Fruit of five carpels, which are joined together at the base, each containing one, rarely two seeds. (*G. Don.*)

Description, &c.—The plants contained in this genus are all shrubs, with alternate simple leaves, sometimes ending in a hard point, and full of pellucid dots. The name of *Eriostemon* is taken from two Greek words, signifying a woolly stamen, from the filaments of the stamens being covered with soft woolly hairs.

1.—ERIOSTEMON BUXIFOLIUM *Smith.* THE BOX-LEAVED ERIOSTEMON.

Engravings.—Bot. Mag., t. 4101; Lodd. Bot. Cab., t. 1831; and our *fig.* 4, in Pl. 19.

Specific Character.—Leaves spreading, sub-reflexed, ovate, obtuse, ending in a mucro. Flowers axillary, on very short peduncles. Calyx divided into five short acute lobes. Petals oblong-ovate. Filaments hairy.

Description, &c.—A very handsome shrub, a native of New Holland, resembling a box-tree when not in flower, but producing its handsome showy blossoms in April and May. It was introduced in 1822.

GENUS V.

CORRÆA *Smith.* THE CORRÆA.

Lin. Syst. OCTANDRIA MONOGYNIA.

Generic Character.—Calyx cup-shaped, four-toothed or entire, permanent. Petals four, somewhat connivent at the base, or joined into a long tube. Stamens eight, equal or longer than the petals; the four opposite them shortest; filaments smooth, awl-shaped, or dilated above the base. Ovary four-lobed, densely beset with stellate hairs, and as if it were furnished with a calyptra. Style four-furrowed, smooth, terminated by a four-lobed stigma. Fruit of four capsular carpels; cells truncate, compressed. Seeds two or three in each cell, shining, fixed to the inside. (*G. Don.*)

Description, &c.—This is a genus of very showy-flowering shrubs, which may be easily hybridised, and from which, consequently, a great number of new kinds are continually being raised. The flowers of the species first introduced are not remarkable for their beauty; but those of some of the hybrids that have been raised are highly ornamental. The species are all natives of Australia. The genus is named in honour of a Portuguese botanist.

1.—CORRÆA ALBA *Andr.* THE WHITE CORRÆA.

Synonymes.—C. cotinifolia *Salisb.*; The Botany Bay Tea-Tree.

Engravings.—Bot. Reg., t. 515; Bot. Rep., t. 18; Lodd. Bot. Cab., t. 152; and our *fig.* 1, in Pl. 20.

Specific Character.—Leaves ovate, downy beneath. Teeth of the calyx small, acute, distant. (*G. Don.*)

Description, &c.—This plant, when not in flower, has somewhat of a dusky appearance, from the leaves being covered on the under side with a reddish down, and having, generally, a cottony appearance on their upper surface. The flowers are nearly white, though the white is tinged with yellow on the outside. When drawn through the hand, the whole plant has a refreshing fragrance, like that of the myrtle. It is said to be used in New South Wales as a substitute for tea, but there is great difficulty in preventing the infusion from being too bitter. The species was introduced by Sir Joseph Banks in 1793, and it soon became very common, from its being of very easy culture, and readily multiplied by cuttings. Under favourable circumstances it flowers twice in the year; that is, in early spring, and again in autumn. It is very nearly hardy.

2.—CORRÆA PULCHELLA *R. Brown.* THE PRETTY CORRÆA.

Engravings.—Bot. Reg., t. 1224; Lodd. Bot. Cab., t. 1684; The Botanist, t. 152; and our *fig.* 2, in Pl. 20.

Specific Character.—Leaves ovate, obtuse, undulated, and pubescent. Corolla cylindrical, ventricose. Calyx short, truncate.

Description, &c.—This very handsome species is a native of Kangaroo Island, on the south coast of New Holland. It is a very ornamental plant, with bright salmon-coloured flowers, which it produces in very great abundance. It was introduced in the year 1824, and is a remarkably healthy, free-growing plant, striking readily from cuttings.

3.—CORRÆA SPECIOSA *Andr.* THE SHOWY CORRÆA.

Synonymes.—C. rubra *Smith;* C. revoluta *Vent.*

Engravings.—Bot. Rep., t. 653; Bot. Mag., t. 1746; Bot. Reg., t. 26; Lodd. Bot. Cab., t. 112; and our *fig.* 3, in Pl. 20.

Specific Character.—Leaves oblong, obsoletely ovate, rounded at the apex, covered with rusty down on the lower side. Corolla cylindrical, erect. Style hairy for half its length with tufted hairs. Calyx truncate.

Description, &c.—This very showy species, which is now one of our commonest greenhouse plants, was introduced in 1806. It is a remarkably free-growing plant, particularly if planted in the ground in a conservatory, where it forms a shrub six feet high, which is covered with flowers during the months of March and April. The flowers are remarkably showy, being of a deep crimson, tipped with green; but they are totally without fragrance. The soil which suits the plant best is a mixture of hazel loam and peat earth; and the species is propagated by cuttings, which strike without the slightest difficulty.

4.—CORRÆA LONGIFLORA *Hort.* THE LONG-FLOWERED CORRÆA.

Engravings.—Paxton's Magazine of Botany, vol. vii., p. 195; and our *fig.* 4, in Pl. 20.

Specific Character.—Leaves obovate. Flowers much longer than the leaves.

Description, &c.—This is a very beautiful hybrid, raised apparently between *C. pulchella* and some of the other species. It is a very elegant little plant, and an abundant flowerer; but much less robust than most of the other kinds. It does not strike readily from cuttings, and on this account it is generally propagated by grafting on some of the more robust species. The operation should be performed very early in spring, as soon as the plant begins to grow; the stock should be *C. speciosa* or *C. pulchella,* and the graft should be inserted either close to the base of the stem, or not more than three inches from it. When the plant is grafted, it should be placed in a slight heat, such as that afforded by a bark bed in which there is a very moderate degree of fermentation; or, if this cannot be procured, the pots may be placed in a spent hot-bed, or in a bed of sand on hot-water pipes, such as that described and figured in my *Amateur Gardener's Calendar*, p. 191.

OTHER SPECIES AND HYBRIDS OF CORRÆA.

C. HARRISII *Beaton.*

This is a remarkably handsome hybrid, raised by Mr. Beaton between *C. speciosa* and *C. pulchella.* It has great "boldness of habit and luxuriance of stems and branches." Mr. Beaton has given a detailed account of his mode of raising this hybrid in "The Gardener's Magazine," from which it appears that he took care that the plant intended to produce the seed should be very healthy, and in a luxuriant state of growth, bearing flowers on its strongest leading branches. He placed this plant in the stove about the end of February; not removing it at once from the greenhouse, but changing its temperature gradually by placing it, first, in a moderate hot-bed. He then took off all the blossom buds from the side-shoots, leaving only those on the main stems; and for the remainder of the process he gives the following directions, which he says are sure to be attended with success. "As soon as the flower expands, extract the anthers from the intended female parent; and next day, or as soon as you perceive the pistils getting moist, apply the pollen, at the same time making two or three slits in the whole length of the corolla, to let out the sweet secretion often lodging on the germen. See that the decaying corolla does not cause the style to damp off, as this ought to be preserved till it dries of itself. As soon as you perceive the germen swelling, stop the leading shoots. Apply all safe stimulants till the seeds are ripe, but do not let the plant expand its energies in the production of young wood. Pinch off every bud as it offers to expand. Keep the plant or plants as near the glass as possible all the time, and sow the seeds as soon as ripe." It must be observed that this plan, though likely to produce hybrids with very ornamental flowers, will have a tendency also to make them more tender than hybrids raised from plants kept in a common greenhouse during the whole period of hybridisation and ripening of the seeds.

C. BICOLOR *Hort.*

This is an exceedingly pretty hybrid, raised between *C. pulchella* and *C. alba*, and, unlike most other hybrids, it preserves the shape as well as the colours of both its parents; the lower part of its flowers being cylindrical and crimson, and the upper part being white and cleft into large segments like *C. alba*. This combination of colours and forms, with the addition of golden yellow stamens, gives the flowers a remarkably lively and brilliant appearance. It is rather a smaller plant than most of the other hybrids, and it should be grown in a light loamy soil. It may be propagated either by cuttings or by grafting it on stocks of *C. pulchella*, *C. alba*, and *C. speciosa*.

C. VIRENS *Smith.*

This species was introduced from Van Diemen's Land, in which country it is found wild, as well as in New South Wales. It has cylindrical flowers, which are green; and the whole plant is covered with brownish hairs. The plant is not very ornamental, as its foliage is coarse and rough, and its green flowers are not at all conspicuous.

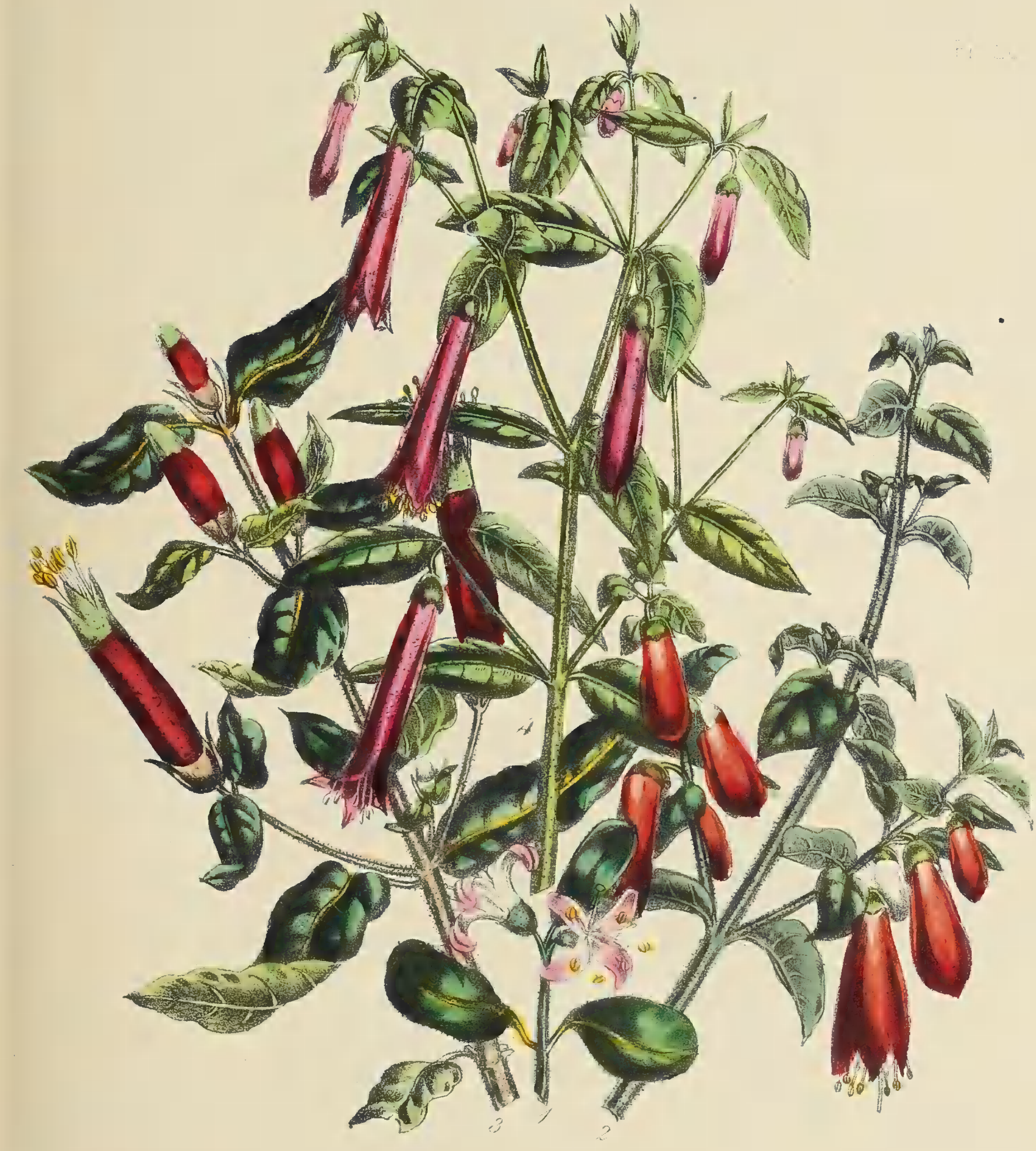
C. RUFA *Dec.*

This plant is said to have white flowers, resembling those of *C. alba*, and rusty leaves. It was introduced in 1819, but it is now very seldom seen in collections.

C. FERRUGINEA *Hook.*

This species appears very closely to resemble *C. rufa*, and indeed it may possibly be the same plant under a different name. The leaves are rather small, and covered on the under surface with a dense brown-red down, formed of numerous short starry hairs thickly matted together. The branches are covered with a similar down, but the upper surface of the leaves is green and quite smooth. The flowers bear some resemblance to those of *C. alba*, but they are more cylindrical, and have a greenish tinge. The species was introduced from Van Diemen's Land in 1836.

Several other hybrids have been raised, of different shades of crimson, pink, and yellowish white, with occasionally shades of green; the form varying from the long cylinder of *C. speciosa* to the short and deeply cleft corolla of *C. alba*.



1 Corræa Alba   2 Corræa pulchella
3 Corræa speciosa   4 Corræa longifolia

OTHER GENERA BELONGING TO THE ORDER RUTACEÆ.

AITONIA CAPENSIS *Lin.*

A little Cape shrub of very slow growth, with pink flowers and ornamental seed-vessels, which are dry and angular, and when ripe of a fine deep pink. This plant was introduced in the year 1774, but it is now very seldom to be met with, as it does not readily strike from cuttings, and very seldom ripens seeds in this country. It was named in honour of W. Aiton, Esq., the author of the "Hortus Kewensis."

ZIERIA *Smith.*

This genus was named by Sir J. E. Smith in honour of a Polish botanist, named Zier. It contains several pretty little shrubs, natives of Australia, one of which (*Z. lævigata*) is decidedly ornamental. All the species have white flowers, but none of them, excepting the one mentioned, can be considered worthy of cultivation at the present day, when so many much more ornamental flowers are common in our greenhouses.

CHAPTER XXIV.

LEGUMINOSÆ *Juss.*

Essential Character.—Calyx constantly of five sepals, which are more or less connected at the base, forming a five-cleft or five-toothed calyx, never five-sepalled in the strict sense of the word; it is, however, sometimes composed of one or two sepals, from coalition or abortion; the segments or teeth of the calyx usually unequal, sometimes connected into two lips; the upper lip bidentate, the lower one trifid. Petals usually five, generally unequal, inserted in the bottom of the calyx, rarely in the torus, usually variously imbricated in æstivation, rarely valvate, generally free, rarely joined into a gamopetalous corolla (sometimes, however, the petals are wanting, and sometimes the corolla is formed of one, two, three, or four petals only). Stamens inserted with the petals, usually double the number of the petals, rarely triple or quadruple that number or fewer, sometimes all free, sometimes variously connected or monadelphous, with the staminiferous tube entire, or cleft in front, or diadelphous, usually with nine joined and one free, rarely joined in two equal bundles, containing five stamens each, and more rarely connected into three bodies. Anthers two-celled, sometimes some of them are changed into abortive threads. Ovary oblong or ovate, sessile or stipitate, usually free, rarely with the stipe adnate to the calyx. Style filiform, rising from the top of the upper suture of the ovary, crowned by a terminal or lateral stigma. Legume usually two-valved, membranous, coriaceous, rarely fleshy or drupaceous, dehiscent or indehiscent, one-celled, sometimes longitudinally two-celled, from the upper suture being bent in so much, or often transversely many-celled, in consequence of the seeds being separated by a spongy or membranous substance, often separating into one-celled joints. Seeds usually numerous, rarely solitary or twin from abortion, fixed to the upper suture of the legume, alternately inserted in both valves, usually oval or kidney-shaped, hanging by various-shaped funicles, rarely expanded into an aril. Testa or spermaderm smooth, usually very smooth and hard. Endopleura usually tumid, appearing like albumen. Embryo sometimes straight, sometimes with the radicle curved back upon the edge of the cotyledons, and lying in the commissure formed by them; but in either case the radicle is directed towards the hilum. Cotyledons leafy, changing through germination; or fleshy (the flesh farinaceous or oily); in a few they are exserted from the spermaderm, others are inclosed in it, as the common Pea, never changing through germination. (*G. Don.*)

Description, &c.—Almost all the Leguminosæ have very ornamental flowers, and generally compound leaves. The characteristic of the order is, that the seed-vessel is a pod. The flowers are of three kinds, the most numerous of which are what are called papilionaceous, or butterfly-shaped, the flowers resembling those of the Pea. Another division has the flowers with nearly equal petals; and the third has the flowers in balls or tufts, like the Mimosa or true Acacia. These divisions or sub-orders are so distinct, that it will be necessary to describe them separately.

SUB-ORDER I.—PAPILIONACEÆ.

The type of the flowers of this tribe may be considered the flowers of the Sweet Pea, which consist of a small calyx, cut into five deep notches, but not divided into regular sepals. The corolla is in five petals, the largest of which stands erect, and is called the vexillum or standard; below this are two smaller petals, which are called the algæ or wings; and below this are two petals, joined together, which form what is called the carina or keel, and which serve as a cradle for the stamens and pistil. There are ten stamens, nine of which are joined together, and have their stalks or filaments growing together half-way up their length, while the tenth stamen is left quite free to the base. The pistil terminates in a slender style, which has a pointed stigma. The pods differ in the different genera, some containing only two or three seeds, as in some of the Australian plants; and others containing from four to nine, or even ten, seeds, as in the common Pea. When the seeds are sown, some of the kinds have fleshy cotyledons or seed-leaves, and these are all fit to eat; but others will have thin cotyledons or seed-leaves, and these are not eatable. Almost all the plants belonging to this division that have thin cotyledons, require a greenhouse in this country, and they are nearly all natives of Australia.

GENUS I.

SOPHORA *R. Brown.* THE SOPHORA.

Lin. Syst. DECANDRIA MONOGYNIA.

Generic Character.—Calyx five-toothed, campanulate at the base, or somewhat attenuated. Petals of the keel usually concrete at the apex. Legume somewhat moniliform, wingless, many-seeded. (*G. Don.*)

Description, &c.—All the plants belonging to this genus are trees, shrubs, or herbs, with pinnate leaves, and ornamental flowers, which vary in colour, being blue, yellow, purple, or white, but never red. The commonest species (*S. japonica* and *S. chinensis*) are hardy trees in the neighbourhood of London, though they require some protection in the north. The greenhouse species are both elegant shrubs with ornamental flowers. The name *Sophora* is from an Arabic word signifying a plant with papilionaceous flowers.

1.—SOPHORA VELUTINA *Lindl.* THE VELVET-LEAVED SOPHORA.

Engravings.—Bot. Reg., t. 1185; and our *fig.* 1, in Pl. 21.

Specific Character.—Shrubby. Leaflets twenty-three, elliptic, mucronate, velvety on both surfaces, as well as the peduncles and branches. Racemes cylindrical, terminal. Petals imbricate; standard bifid.

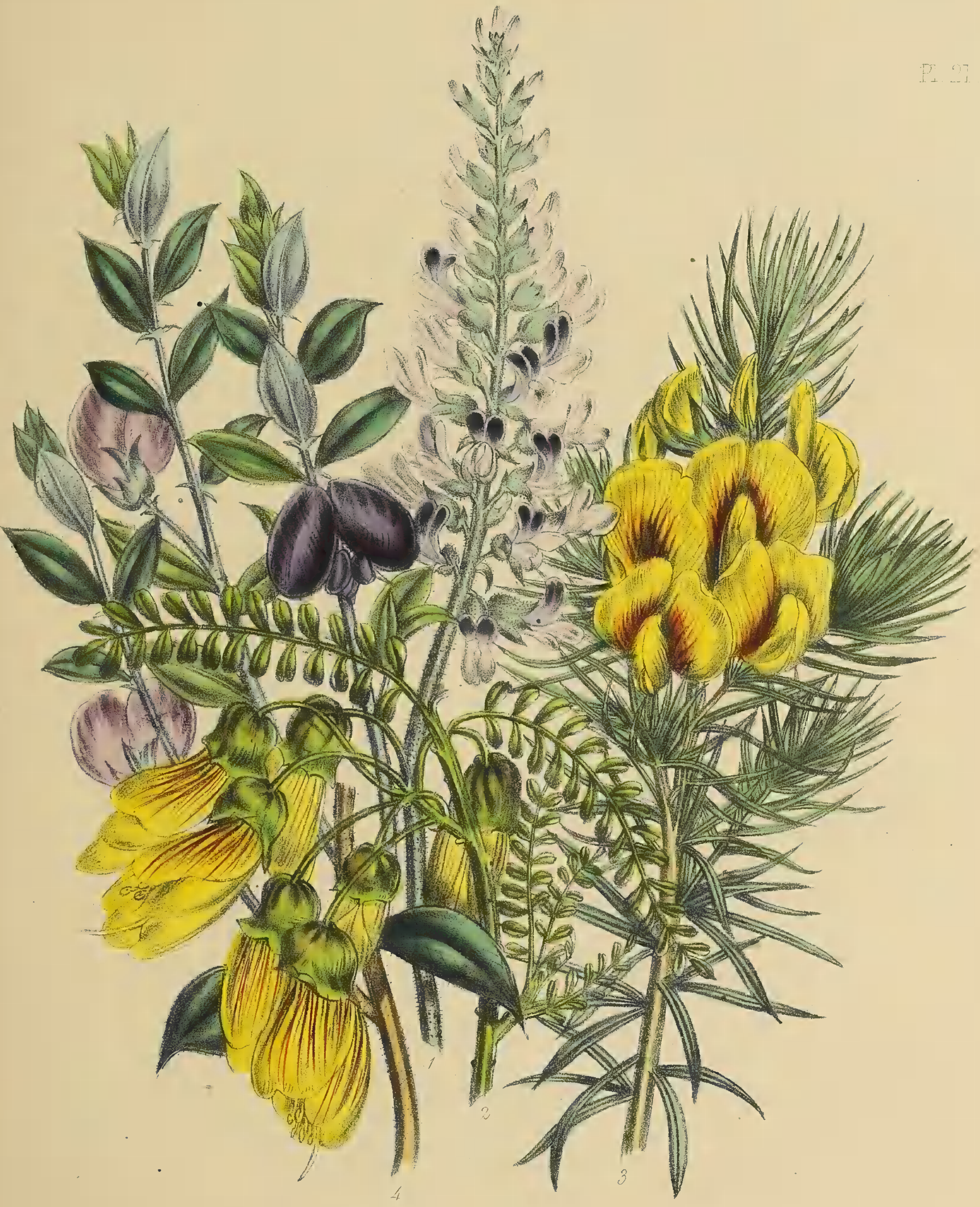
Description, &c.—A very handsome plant, a native of Nepal, which Dr. Lindley has classed with the genus Sophora, though, as he observes, he is not by any means satisfied that it is a genuine species of that genus. The flowers are produced in long erect racemose spikes, and they are purple, the standard being of a deeper hue than the other parts of the flower. The species was introduced in 1820, and as it is very nearly hardy, it is supposed that it might stand in the open air, at least in the neighbourhood of London, if it were grafted on a stock of *Sophora japonica;* and this would be particularly desirable, as that plant, though it has very handsome foliage, has very small flowers.

2.—SOPHORA MACROCARPA *Smith.* THE LONG-PODDED SOPHORA.

Engraving.—Lodd. Bot. Cab., t. 1125.

Specific Character.—Arboreous. Leaves with thirteen or nineteen elliptic-oblong, obtuse, coriaceous leaflets, which are silky beneath. Raceme short, axillary. (*G. Don.*)

Description, &c.—A very elegant little plant, with yellow flowers, and long silky legumes. It is a native of Chili, where it is called *Mayo.*



1 *Sophora velutina.* — 2 *Edwardsia microphylla.*
3 *Cyclopia genistoides.* — 4 *Podalyria buxifolia?*

GENUS II.

EDWARDSIA *Salisb.* THE EDWARDSIA.

Lin. Syst. DECANDRIA MONOGYNIA.

Generic Character.—Calyx obliquely five-toothed, with the upper side cleft. Petals five, distinct, conniving into a papilionaceous corolla. Keel long. Stamens ten, with the filaments deciduous, and inserted into a cup-shaped, ten-angled torus. Legume moniliform, one-celled, two-valved, four-winged, and many-seeded. (*G. Don.*)

Description, &c.—All the species belonging to this genus are shrubs or little trees, with pinnate leaves, which have an immense quantity of leaflets that fall off late in the autumn. The flowers are of a golden yellow, and they are produced in very short clustered spikes. The genus is named in honour of Sydenham Edwards, a celebrated botanical draughtsman, who acted in that capacity for many years to the "Botanical Magazine," and who first commenced the "Botanical Register."

1.—EDWARDSIA MICROPHYLLA *Salisb.* THE SMALL-LEAVED EDWARDSIA.

Synonyme.—Sophora microphylla *Ait.*
Engravings.—Bot. Mag., t. 1442; and our *fig.* 2, in Pl. 21.
Specific Character.—Leaves with twelve or fifteen pairs of obovate, roundish, emarginate leaflets, which are sometimes smooth, and sometimes pubescent beneath. Petals of the keel elliptic, hooked on the back.

Description, &c.—This is a very handsome small tree, which thrives best planted in the ground in a conservatory, and in such a situation it flowers abundantly. The leaves are remarkable for their immense number of leaflets, which in some cases are upwards of forty, or even forty-five. They are very small and neatly formed, so that they are ornamental even when the plant is not in flower. The flowers are very showy, and the seed-pod is curiously winged and drawn in between every seed, so as to have somewhat the appearance of a necklace of beads. The species is a native of New Zealand, whence it was introduced in 1722.

2.—EDWARDSIA GRANDIFLORA *Salisb.* THE LARGE-FLOWERED EDWARDSIA.

Synonymes.—E. macrophylla *Wand.*; Sophora tetraptera *Ait.*
Engravings.—Bot. Mag., t. 167; and Lodd. Bot. Cab., t. 1162.
Specific Character.—Leaflets from seventeen to twenty-one, oblong-linear, somewhat lanceolate, rather villous beneath. Petals of keel broadly falcate. (*G. Don.*)

Description, &c.—This plant is less ornamental than the preceding species, as the flowers are not only somewhat smaller, but they appear before the leaves. The species is a native of New Zealand, whence it was introduced in 1774. In that year a tree was planted by Mr. Forsyth against a wall in the Botanic Garden at Chelsea, where it still remains, flowering freely every year, but requiring a slight protection every winter.

3.—EDWARDSIA MACNABIANA *Graham.* MR. MACNAB'S EDWARDSIA.

Engraving.—Bot. Mag., t. 3735.
Specific Character.—Leaflets twenty or more, elliptic-obovate, glabrous above, downy beneath. Vexillum rounded, shorter than the wings. Petals of the keel longer than the wings. Stamens as long as the keel. Anthers small. Germen covered with silky, adpressed, rufous hairs, and marked externally by the numerous ovules.

Description, &c.—This is by far the handsomest species of the genus, and its flowers, which are produced in very great abundance, scarcely appear to belong to a leguminous plant, from both the wings and keel being shorter than the standard. It is a remarkably ornamental shrub, and has been for several years in cultivation in the Botanic Garden at Edinburgh; and, though its exact origin is unknown, it is supposed to have been raised in that garden, either from seeds received from abroad or produced by *E. grandiflora.* If the latter were the case, it is either a hybrid or very distinct from its parent, as it differs from *E. grandiflora* not only in the shape and much greater abundance of its flowers, but in being much hardier, it having survived a degree of frost that killed *E. grandiflora* and *E. microphylla*. It will, indeed, live in the open air against a south wall, though it will not flower so well as in a conservatory.

OTHER SPECIES OF EDWARDSIA.

E. CHRYSOPHYLLA *Salisb.*

This is a pretty little plant, the flowers of which are much smaller than those of the other species, and not produced in clusters. The leaves are also small and much crowded, and they are covered with a yellow pubescence. The species is a native of the Sandwich Islands, whence it was introduced about 1820.

E. MYRIOPHYLLA *Wand.*

A small plant with yellow flowers, and leaves which have an immense number of leaflets. It is nearly allied to *E. microphylla*, and like that species is a native of New Zealand, whence it was introduced in 1818.

GENUS III.

CYCLOPIA *Vent.* THE CYCLOPIA.

Lin. Syst. DECANDRIA MONOGYNIA.

Generic Character.—Calyx five-cleft, unequal, thrust in at the base, the lowest tooth longest. Vexillum large, with longitudinal wrinkles. Wings having a transverse plait. Keel inflexedly mucronate. Stamens deciduous. Stigma bearded. Legume compressed, pedicellate, one-celled, many-seeded, coriaceous. (*G. Don.*)

Description, &c.—The species belonging to this genus are smooth broom-like shrubs, with bright yellow flowers, which are produced in the axils of the leaves. They are all natives of the Cape of Good Hope.

1.—CYCLOPIA GENISTOIDES *R. Brown.* THE BROOM-LIKE CYCLOPIA.

Synonymes.—Ibbetsonia genistoides *Sims.*; Gompholobium maculatum *Andr.*; Podalyria genistoides *Thunb.*; Sophora genistoides *Burm.*

Engravings.—Bot. Mag., t. 1259; Bot. Rep., t. 427; Lodd. Bot. Cab., t. 1111; and our *fig.* 3, in Pl. 21.

Specific Character.—Smooth. Leaflets awl-shaped. Calyx mutic. Bracteas oblong-ovate. (*G. Don.*)

Description, &c.—A very showy plant with large golden yellow flowers, marked with red at the base of the standard. The keel of the flower is curiously curved at the point, and terminated with a beak, giving it somewhat the appearance of a bird's head. The seed-pod is nearly two inches long, and less than half an inch broad: it is black, woody, and marked on the outside by the impression of the kidney-shaped seeds which it incloses. The species was introduced in 1787; and it produces its flowers in July and August.

OTHER SPECIES OF CYCLOPIA

C. GALIOIDES *Dec.*

This species was introduced in 1820, and it forms a shrub four feet high.

C. TENUIFOLIA *Lehm.*

A dwarf shrub with bristle-like leaflets, and keel-shaped bracteas. Introduced in 1826.

C. LATIFOLIA *Dec.*

This species has rather broad leaflets, shaped something like the leaves of the Box tree. The flowers have footstalks, but they are less numerous and less showy than those of the other species.

GENUS IV.

PODALYRIA *Lam.* THE PODALYRIA.

Lin. Syst. DECANDRIA MONOGYNIA.

Generic Character.—Calyx five-cleft, without unequal lobes, thrusting at the base. Vexillum large, covering the keel and wings. Stamens ten, permanent, somewhat connate at the base. Stigma capitate. Legume sessile, ventricose, many-seeded. (*G. Don.*)

Description, &c.—All the species belonging to this genus are pretty little Cape shrubs, usually covered with silky hairs, and having purplish, rose-coloured, or white flowers.

1.—PODALYRIA BUXIFOLIA *Willd.* THE BOX-LEAVED PODALYRIA.

Synonymes.—P. pedunculata *Pers.*; Sophora buxifolia *Retz.*; Sophora pedunculata *Thunb.*

Engravings.—Bot. Reg., t. 869; Lodd. Bot. Cab., t. 1020; and our *fig.* 4, in Pl. 21.

Specific Character.—Leaves oval or obovate, glaucous above and silky beneath. Pedicels one-flowered, about the length of the leaves. Calyxes covered with rusty hairs.

Description, &c.—This species is often confused with the *P. buxifolia* of Lamarck, a plant which has paler and larger flowers, and smaller leaves. The *P. buxifolia* of Willdenow was introduced in 1790, and it forms a shrub about two feet high.

There are several other species of Podalyria, all of which are ornamental plants in greenhouses

GENUS V.

CHOROZEMA *Labill.* THE CHOROZEMA.

Lin. Syst. DECANDRIA MONOGYNIA.

Generic Character.—Calyx half five-cleft, bilabiate; upper lip bifid, lower one three-parted. Keel of flower ventricose, shorter than the wings. Style short, hooked, crowned by an obliquely obtuse stigma. Legume ventricose, one-celled, many-seeded, sessile or subsessile. (*G. Don.*)

Description, &c.—The plants belonging to this genus are all highly ornamental tender shrubs, with splendid flowers; and they are all natives of Australia. The name of *Chorozema* is derived from two Greek words, viz. *choros*, a dance, and *zema*, drink; and this seemingly odd name was given to the genus by Labillardière, who, when he went on a voyage to the South Seas in quest of the unfortunate La Peyrouse, landed on the south-east coast of New Holland, and having suffered excessively from thirst when exploring the country, and having been tantalised by finding many salt springs, at last met with an ample supply of fine fresh water, which flowed in a refreshing stream, on the banks of which he found a pretty flowering plant, to which he gave the name of *Chorozema* in memory of the delight he had experienced in quenching his thirst.

All the species of Chorozema are easily propagated by cuttings, which may be treated according to the following directions, which are quoted from the "Botanical Register" for February, 1838:—"The cuttings may be taken off at any season of the year, but the best time is early in spring. The soft newly-formed parts of the plant should be used for this purpose, as they are found to strike root more readily than older wood; they should be inserted in silver sand and covered with a bell-glass. A little artificial heat will be found useful if the cuttings are put in in the early part of the spring, but if in the summer this will be unnecessary. They will root in a few days, and should then be potted in peat-soil mixed with a little sand. If it be bright sunshine after they are potted, a slight shade must be thrown over the glass for a day or two until they are better established. Afterwards they must be removed to the greenhouse, where they must have plenty of light and air, and be regularly shifted from small to larger pots, as their roots require it. By giving them sufficient room, and being careful in watering, &c., they will soon form handsome specimens." All the species are very apt to grow in a straggling manner, with long portions of naked stems, and are very much improved by occasional pruning. Thus, after they are potted off, as soon as the main shoot is about three inches high, the top should be cut off, and the plant will then begin to branch in all directions. The branches should also have their tops cut off as soon as they are three inches long. Great care should be taken when potting these plants to let them have ample drainage.

1.—CHOROZEMA ILICIFOLIA *Labill.* THE HOLLY-LEAVED CHOROZEMA.

Specific Character.—Leaves pinnatifidly-toothed, spinose, oblong-lanceolate, with an entire acumen, which is longer than the teeth bracteoles on the top of the pedicels. (*G. Don.*)

Description, &c.—This species was the plant Labillardière found on the banks of the stream which gave so much delight to himself and his companions on the south-west coast of New Holland, but though this species was the first introduced, having been brought to this country in 1803, it is now very seldom seen in collections. It is described as a dwarf spreading shrub with red flowers, the standard of which is yellow at the base, and holly-like leaves which are downy on the under side; the branches also are covered with a soft down.

2.—CHOROZEMA NANUM *Sims.* THE DWARF CHOROZEMA.

Synonyme.—Pultenæa nana *Andr.*
Engravings.—Bot. Mag., t. 1032; Bot. Rep., t. 434, and Lodd. Bot. Cab., t. 1002.

Specific Character.—Stem erect, but flexible; leaves oval-obtuse, sinuately-toothed, with sharp spines.

Description, &c.—A very pretty little plant, introduced at the same time as the preceding species, to which it bears considerable resemblance both in its flowers and leaves, though it differs in being smaller in all its parts, and in the stem being erect, and the plant being more compact.

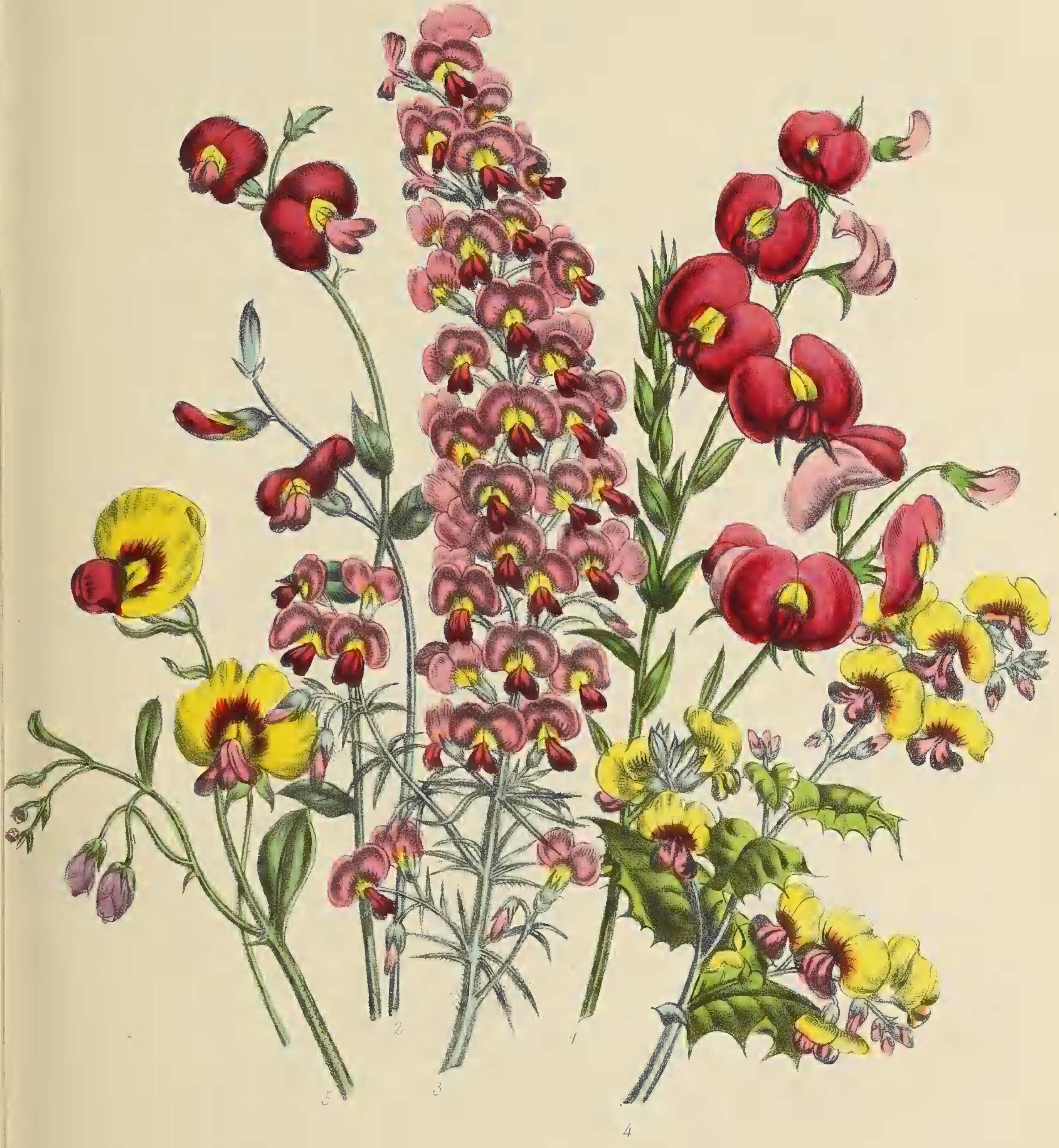
3.—CHOROZEMA HENCHMANNI *R. Brown.* MR. HENCHMAN'S CHOROZEMA.

Engravings.—Bot. Mag., t. 3607; Bot. Reg., t. 986; Lodd. Bot. Cab., t. 1233; Paxt. Mag. of Bot., vol. ii., p. 171; and our *fig.* 3. in Pl. 22.

Specific Character.—Plant hoary; leaves acicular or needle-shaped. Flowers axillary. (*G. Don.*)

Description, &c.—This very handsome plant differs considerably from most of the other species of Chorozema, as its flowers are produced in long terminal spike-like racemes. The plant was discovered by Mr. Baxter, a collector, in the south-west of New Holland, and he describes the species as forming a shrub of from four to five feet high, laden with flowers, which were so abundant as completely to cover it in every part. The foliage is grey, and by no means ornamental. The species was introduced in 1824, and it succeeds best when planted in the free ground of a conservatory, in a soil composed of equal parts of peat and loam.

Pl. 22



1 Chorozema Dicksonii. _ 2 Chorozema ovatum. 3 Chorozema Henchmanni.
4 Chorozema varium — 5. Chorozema spartioides.

4.—CHOROZEMA DICKSONII *Benth.* MR. DICKSON'S CHOROZEMA.

Engravings.—Paxt. Mag. of Bot., vol. viii., p. 173; The Botanist, t. 106; and our *fig.* 1, in Pl. 22.

Specific Character.—Stem shrubby, erect. Leaves few, scattered, lanceolate, slightly ciliated, mucronate, sometimes recurved, and sometimes slightly pilose. Racemes opposite to the leaves, slightly spicate. Calyx bilabiate covered with hairs, the hairs being partly long and white, and partly black and adpressed.

Description, &c.—A very handsome species, the seeds of which were imported from the Swan River in 1836. The plant was first raised in Great Britain at Edinburgh.

5.—CHOROZEMA OVATUM *Lindl.* THE OVATE-LEAVED CHOROZEMA.

Engravings.—Bot. Reg., t. 1528; Paxt. Mag. of Bot., vol. iv., p. 153; and our *fig.* 2, in Pl. 22.

Specific Character.—Stem weak, ascending. Leaves ovate, acute. Segments of the calyx acuminate. Peduncles very long, naked, terminal, and three-flowered.

Description, &c.—A pretty little plant, of which Dr. Lindley says, that it is nearly allied to *C. rhombeum*, and yet perfectly distinct from that species. It flowers in May, but less abundantly than most of the other species. It was introduced by Baxter in 1831.

6.—CHOROZEMA CORDATUM *Lindl.* THE CORDATE-LEAVED CHOROZEMA.

Engravings.—Bot. Reg. for 1838, t. 10; Paxt. Mag. of Bot., vol. v., p. 97; The Botanist, t. 89; Flor. Cab., vol. ii., p. 17, t. 50.

Specific Character.—Leaves cordate-ovate; margin sinuately dentate, and ending in short spines. Racemes terminal, few-flowered, lax. Limb of the calyx equal in length to the tube.

Description, &c.—A very pretty species, though with rather small and few flowers. A native of the Swan River Colony, whence seeds were imported by Robert Mangles, Esq., of Sunning Hill. This species is one of the most free-growing of the genus, as a plant of it, when only twelve months old, was two feet and a half high. The stem, however, is not strong enough to support itself, and as it does not cling to anything naturally, it requires careful training. The species was introduced in 1837.

7.—CHOROZEMA VARIUM *Lindl.* THE VARIOUS-LEAVED CHOROZEMA.

Engravings.—Bot. Reg. for 1839, t. 49; and our *fig.* 4, in Pl. 22.

Specific Character.—Leaves almost sessile, subrotund-cordate, undulated, spinosely-dentate, entire, pubescent. Racemes erect, many-flowered, longer than the leaves. Calyx obtuse at the base, hairy.

Description, &c.—This is the most popular of all the kinds of Chorozema, as it grows freely, and may be readily struck by cuttings, or raised from seeds. The only care that it requires is to let it have plenty of air and not too much water, as it is rather apt to damp off just above the ground as soon as it has done flowering. It was introduced in 1837.

8.—CHOROZEMA SPARTIOIDES *Lodd.* THE BROOM-LIKE CHOROZEMA.

Engravings.—Lodd. Bot. Cab., t. 1953; Paxt. Mag. of Bot., vol. x., p. 127; and our *fig.* 5, in Pl. 22.

Specific Character.—Branches irregular, drooping. Leaves few, sessile, rather spathulate, retuse. Peduncles very long, axillary.

Description, &c.—This species was raised originally by Messrs. Loddiges, in 1832, and they found it such a small, weak plant, that they expressed a fear when they figured it in their *Botanical Cabinet*, that they should not be able to propagate it. When, however, it was raised at Chatsworth, Mr. Paxton states that though he found it grew with a short stem, it spread out its branches to a considerable extent horizontally, and when trained over a horizontal frame-work, it made a large plant. Thus treated, it became quite woody, and produced an immense quantity of large showy flowers. These appeared in April, and are consequently much earlier than the flowers of any other species of the genus.

OTHER SPECIES OF CHOROZEMA.

C. RHOMBEUM *Dec.*

The flowers of this species have dark copper-coloured wings and keel, with an orange-coloured standard, having a yellow base. It was introduced in 1803.

C. TRIANGULARE *Lindl.*

This species is very nearly allied to *C. nanum*, but it differs in having its leaves much more deeply pinnatifid, and their points drawn out so much that some of the leaves are almost halbert-shaped. The flowers are small, but they are of a remarkably rich colour. The species is rather tender, and very apt to damp off in winter. It was introduced about 1830.

C. ANGUSTIFOLIA *Hügel.*

This is the plant called *Dillwynia glycinifolia* in the *Botanical Register;* and, in fact, as it has very little the appearance of a Chorozema, it is most probable that it does not belong to that genus. It is a native of King George's Sound, and was introduced in 1832.

C. SPECTABILE *Lindl.*

This is one of the most beautiful of all the species of Chorozema, in consequence of its long drooping clusters of orange-coloured flowers, which appear in great abundance during the winter months. It is a twining plant of very easy cultivation, and it is very nearly hardy. It grows best trained over a small trellis, but when kept in too warm a situation it is very frequently attacked by the red spider.

GENUS VI.

PODOLOBIUM *R. Brown.* THE PODOLOBIUM.

Lin. Syst. DECANDRIA MONOGYNIA.

Generic Character.—Calyx five-cleft, bilabiate; upper lip bifid; lower lip three-parted. Carina compressed, length of wings, and about equal to the wide vexillum. Ovary four-seeded. Style ascending. Stigma simple. Legume pedicellate, linear-oblong, rather ventricose, smooth inside. (*G. Don.*)

Description, &c.—The species belonging to this genus are all small Australian shrubs, so nearly allied to Chorozema, that it is extremely difficult to distinguish them from the plants belonging to that genus when they are in flower, as the principal difference consists in the seed-pod being on a stalk within the calyx; and hence the genus takes its name from the Greek words *podos*, a foot, and *lobos*, a pod.

1.—PODOLOBIUM TRILOBATUM *R. Brown.* THE THREE-LOBED PODOLOBIUM.

Synonymes.—Chorozema trilobatum *Smith;* Pultenæa ilicifolia *Andr.*

Engravings.—Bot. Mag., t. 1477; Bot. Rep., t. 320.

Specific Character.—Leaves opposite, somewhat three-lobed, with a transverse base, spiny-toothed; lateral lobes much shorter than the terminal ones. Ovary silky.

Description, &c.—This plant is so exceedingly like a Chorozema, that it is very difficult even for a botanist to distinguish between them when the plant is not in fruit. It is a very pretty little plant with yellow flowers, which have a red keel, and the standard red at the base. It was introduced in 1792.

OTHER SPECIES OF PODOLOBIUM.

P. STAUROPHYLLUM *Dec.*

This rather singular-looking plant is a native of the eastern coast of New Holland. It is a shrub with small yellow flowers, and very curious leaves, which are divided into three sharply-pointed lobes. The species was introduced in 1822, and it flowers in March and April.

There are several other species, but those above described are the most remarkable.

GENUS VII.

OXYLOBIUM *Andr.* THE OXYLOBIUM.

Lin. Syst. DECANDRIA MONOGYNIA.

Generic Character.—Calyx profoundly five-cleft, somewhat bilabiate. Carina compressed, length of wings, but about equal in length to the broad vexillum. Stamens inserted in the torus or in the bottom of the calyx. Style ascending, crowned by a simple stigma. Legume sessile or subsessile, many-seeded, ventricose, ovate, acute. (*G. Don.*)

Description, &c.—Very ornamental little plants, natives of Australia, and bearing abundance of yellow flowers The name of the genus is derived from two Greek words, signifying a sharp pod.

1.—OXYLOBIUM ARBORESCENS *R. Brown.* THE TREE OXYLOBIUM.

Engravings.—Bot. Mag., t. 2442; Bot. Reg., t. 392; and Lodd. Bot. Cab., t. 163.

Specific Character.—Leaves linear-lanceolate; pedicels having permanent bracteas at their apex. Corymbs of flowers crowded. Legumes hardly longer than the calyx. (*G. Don.*)

Description, &c.—This species differs from all the others which are nearly allied to it in assuming a decidedly tree-like character, particularly if planted in the free ground of a conservatory, where it will soon grow to a considerable size. It is a native of Van Diemen's Land, whence it was introduced in 1805. It flowers from April to June, and its flowers are yellow, with a slight stain of red at the base of the standard.

2.—OXYLOBIUM RETUSUM *Lindl.* THE NETTED-LEAVED OXYLOBIUM.

Synonymes.—Chorozema coriacea *Smith*; Callistachys capitata *Hort.*

Engravings.—Bot. Reg., t. 913; and our *fig.* 1, in Pl. 23.

Specific Character.—Leaves oblong, retuse, coriaceous, reticulated, glabrous. Corymbs axillary, stalked, crowded, shorter than the leaves. (*G. Don.*)

Description, &c.—A very showy plant, with large corymbs of orange-coloured flowers; a native of King George's Sound, in New Holland, whence it was introduced in 1823.

OTHER SPECIES OF OXYLOBIUM.

O. CORDIFOLIUM *Andr.*

A handsome species with cordate leaves and coppery-red flowers, which continue appearing all the summer.

O. PULTENEÆ *Dec.*

A very curious plant, with a mass of flowers crowded together, and growing at the point of each shoot. The plant is generally two feet or more high, and the flowers form very large, ornamental, pyramidal masses.

The species was introduced in 1824. The plant has a very singular appearance, from its immense masses of flowers, which are crowded together as densely as possible, and contrast strongly with the slenderness and fewness of its leaves.

O. OBOVATUM *Paxt.*

The flowers of this species, though equally crowded with those of the other kinds which have been described, are smaller and less numerous; they are also of a darker colour. The leaves, however, are very curious, being obcordate, and the midrib terminating in a sharp point.

O. CAPITATUM *Lindl.*

This plant is so very different from the other species of the genus, that it really does not seem to belong to it. It has slender and needle-shaped leaves, and a small head of yellow flowers at the end of each shoot. It was introduced in 1841.

GENUS VIII.

CALLISTACHYS *Vent.* THE CALLISTACHYS.

Lin. Syst. DECANDRIA MONOGYNIA.

Generic Character.—Calyx bilabiate; upper lip bifid; lower one three-parted. Vexillum erect, longer than the keel and wings, which are about equal in length. Stamens inserted in the disk. Style incurved. Stigma simple, acute. Legume stipitate, woody, dehiscent at the apex; young ones many-celled, but with the transverse dissepiments at length vanishing. (*G. Don.*)

Description, &c.—Very elegant shrubs, all natives of Australia, with entire leaves, silky on the under surface, and with long terminal racemes of very ornamental yellow flowers. There are several species, which differ chiefly in the shape of the leaves. The name of *Callistachys* is from two Greek words, signifying a beautiful spike, in allusion to the flowers.

GENUS IX.

BRACHYSEMA *R. Brown.* THE BRACHYSEMA.

Lin. Syst. DECANDRIA MONOGYNIA.

Generic Character.—Calyx five-cleft, a little unequal, with a ventricose tube. Vexillum shorter than the wings and keel, which are compressed and about equal in length. Ovary with its pedicel girded by a little sheath at the base. Style filiform, elongated. Legume ventricose, many-seeded. (*G. Don.*)

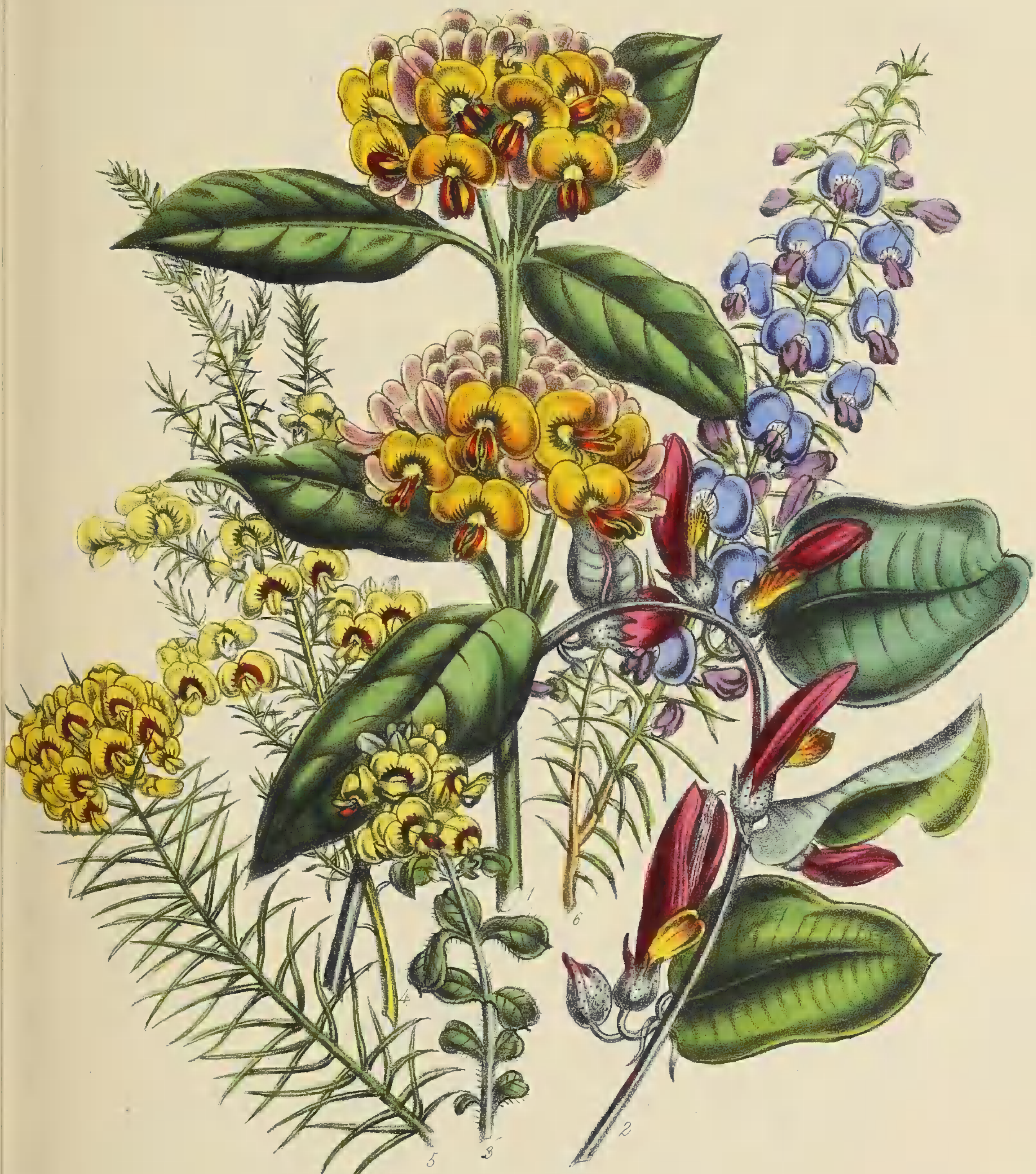
Description, &c.—There are only two species in this genus, which takes its name from two Greek words, signifying a short standard, the standard of the flower being remarkably short.

1.—BRACHYSEMA LATIFOLIUM *R. Brown.* THE BROAD-LEAVED BRACHYSEMA.

Engravings.—Bot. Mag., t. 2008; Bot. Reg., t. 118; and our *fig.* 2, in Pl. 23.

Specific Character.—Leaves ovate, flat. Vexillum oblong, obovate.

Description, &c.—This is a climbing or procumbent shrub, according to the circumstances in which it is placed; as though it is procumbent in its native country, it appears to grow most vigorously, and to flower most freely, when it is trained up a stick. The leaves are of a bluish-green, and quite silky beneath. The flowers are of a brilliant scarlet, and they are remarkable from the standard, which is usually the largest part, being the smallest. The species is a native of the south-west coast of New Holland, and it was introduced in 1803. It flowers from April till July, and requires a greenhouse all the year.



1 Oxylobium retusum. 2 Brachysema latifolium 3 Euchilus obcordatus.
4 Dillwynia parvifolia. 5 Eutaxia pungens. 6 Hovea pungens.

2.—BRACHYSEMA UNDULATUM *Ker.* THE WAVED-LEAVED BRACHYSEMA.

Engravings.—Bot. Reg., t. 642; Lodd. Bot. Cab., t. 778.

Specific Character.—Leaves elliptic, undulated. Calyx bracteolate under the base, three times shorter than the petals. Vexillum oblong, cordate, convolute, and bluntish above. (*G. Don.*)

Description, &c.—This species is much less ornamental than the other, as the flowers are of a greenish-yellow, and quite inconspicuous. It flowers early in spring, and is decidedly procumbent, the stems frequently withering when it is attempted to train them upwards. It was introduced in 1820.

GENUS X.

GOMPHOLOBIUM *Smith.* THE GOMPHOLOBIUM.

Lin. Syst. DECANDRIA MONOGYNIA.

Generic Character.—Calyx five-parted, nearly equal. Vexillum broad. Stigma simple. Carina of two concrete petals. Legume many-seeded, nearly spherical, very blunt. (*G. Don.*)

Description, &c.—The species belonging to this genus are all stiff shrubs, natives of Australia, with compound leaves, which are generally very slender. The pods are smooth both on the outside and the inside, the latter being a distinguishing characteristic, the pods of the ornamental leguminous plants being often, like those of the bean, covered inside with a soft silky down. The calyx is generally fringed with very fine wool, and the flowers are generally yellow. The name of the genus is derived from the Greek words *gomphos*, a club, and *lobos*, a pod, in allusion to the shape of the pod, which somewhat resembles that of a club.

1.—GOMPHOLOBIUM GRANDIFLORUM *Smith.* THE LARGE-FLOWERED GOMPHOLOBIUM.

Engraving.—Bot. Reg., t. 484.

Specific Character.—Leaflets three, linear, acute. Stem erect; branches angular. Keel beardless. Vexillum twice the length of the calyx and the carina. (*G. Don.*)

Description, &c.—This is a broom-like shrub, growing about three or four feet high, and flowering in October. The branches are remarkably rigid, but the flowers are large and handsome, closely resembling those of the broom, but easily distinguished by the woolly fringe of the calyx, which looks at a little distance like a delicate white margin. The pod is almost round, and it looks so much inflated as to obtain for the genus its English name of Air-Pod. The species is a native of the eastern coast of New Holland, whence it was introduced in 1803.

2.—GOMPHOLOBIUM POLYMORPHUM *R. Brown.* THE VARIABLE GOMPHOLOBIUM.

Synonyme.—G. grandiflorum *Andr.*

Engravings.—Bot. Mag., t. 1533; Bot. Rep., t. 642.

Specific Character.—Leaves ternate, or quinate; leaflets linear, recurved at the margin, sometimes dilated at the point. Stem either procumbent or climbing.

Description, &c.—This species, which is called *G. grandiflorum* in Andrews's "Botanist's Repository," is so far from being the same as that plant, that it might easily be mistaken for another genus. The stem, instead of being rigid, is procumbent unless it has a support; and the flowers, instead of being yellow, are scarlet on the inside, with a yellow base, and pink on the back. The species is a native of the south-west coast of New Holland, whence it was introduced in 1803. It occasionally ripens seeds in this country, and by these, indeed, it is generally propagated, as it is extremely difficult to strike it from cuttings. It requires to be kept in the greenhouse all the year, and it is generally considered by gardeners to be what is called a shy plant, that is, one which requires more than ordinary care to preserve it.

There are several other species of *Gompholobium*, but the two that have been mentioned are decidedly the most ornamental.

GENUS XI.

EUCHILUS *R. Brown.* THE EUCHILUS.

Lin. Syst. DECANDRIA MONOGYNIA.

Generic Character.—Calyx profoundly five-cleft, bibracteolate at the base, bilabiate; lobes of the upper lip ovate and large, of the lower one setaceous. Carina length of wings. Ovary two-seeded, pedicellate. Style subulate, ascending. Stigma simple. Legume compressed. Seeds strophiolate, with the lobes of the strophiola entire behind. (*G. Don.*)

Description, &c.—There is only one species in this genus, the name of which is derived from two Greek words, signifying well-lipped.

1.—EUCHILUS OBCORDATUS *R. Brown.* THE HEART-LEAVED EUCHILUS.

Engravings.—Bot. Reg., t. 403; Lodd. Bot. Cab., t. 60; and our *fig.* 3, in Pl. 23.

Specific Character.—Branches terete, canescent. Leaves obcordate, or wedge-shaped, villous beneath.

Description, &c.—A little plant, of no great beauty, with small yellow flowers marked with red. It is a native of the south-west coast of New Holland, whence it was introduced about 1803. It is very seldom met with, as it is rather troublesome to cultivate.

GENUS XII.

DILLWYNIA *Smith.* THE DILLWYNIA.

Lin. Syst. DECANDRIA MONOGYNIA.

Generic Character.—Calyx five-cleft, bilabiate, tapering at the base. Petals inserted in the middle of the calyx. Lamina of vexillum twice the breadth of the length, two-lobed, lobes spreading. Ovary two-seeded. Style hooked. Stigma capitate. Legume ventricose. Seeds strophiolate. (*G. Don.*)

Description, &c.—This is a very extensive genus, the species of which are all small heath-like shrubs, with abundance of bright-yellow flowers. They all strike freely from cuttings, and require very little care, provided they are planted in a light sandy loam, and the pots in which they are grown are filled to about one-third of their depth with potsherds. All the species are natives of Australia; and the genus is named in honour of L. W. Dillwyn, Esq., of Sketty Hall, near Swansea, a well-known and very able botanist.

1.—DILLWYNIA PARVIFOLIA *R. Brown.* THE SMALL-LEAVED DILLWYNIA.

Synonyme.—D. microphylla *Sib.*

Engravings.—Bot. Mag., t. 1527; Lodd. Bot. Cab., t. 559; and our *fig.* 4, in Pl. 23.

Specific Character.—Leaves short, spreading, decussate, crowded. Flowers sub-capitate. Peduncles bibracteate. Stigma capitate.

Description, &c.—A very pretty little shrub, with abundance of bright-yellow flowers, and short heath-like leaves. A native of the eastern coast of New Holland, whence it was introduced in the year 1800. It generally grows about a foot high, and is a very common plant in greenhouses, from the ease with which it is cultivated, and particularly the readiness with which it strikes from cuttings. It was first raised in this country by Messrs. Loddiges.

OTHER SPECIES OF DILLWYNIA.

D. FLORIBUNDA *Smith.*

This plant, which is figured in the "Botanical Magazine" under the name of *D. ericæfolia,* is not nearly so handsome as *D. parvifolia,* but its flowers, which are produced only at the extremity of the shoots, are of a richer colour.

D. GLABERRIMA *Smith.*

This is rather an ornamental species, but certainly not equal in beauty to the one first mentioned. It was introduced in the year 1800.

There are several other species, but those which have been mentioned are the most ornamental, with the exception of *D. cinerascens,* a native of Van Diemen's Land, which was introduced in 1819; and which is so nearly hardy, that it will stand out of doors with only a very slight protection against frost. Notwithstanding this advantage, however, and its being decidedly ornamental, it is very seldom met with.

GENUS XIII.

EUTAXIA *R. Brown.* THE EUTAXIA.

Lin. Syst. DECANDRIA MONOGYNIA.

Generic Character.—Calyx bilabiate; upper lip somewhat emarginate, lower lip trifid. Vexillum broader than long. Ovary two-seeded. Style hooked. Stigma capitate. Legume a little ventricose. Seeds strophiolate. (*G. Don.*)

Description, &c.—The species contained in this genus have been separated from Dillwynia. The name of *Eutaxia* signifies modesty, in allusion, it is supposed, to the modest appearance of the plants when they are not in flower; though the name does not seem well chosen, as, when they are in flower, they are remarkably brilliant and showy.

1.—EUTAXIA MYRTIFOLIA *R. Brown.* THE MYRTLE-LEAVED EUTAXIA.

Synonymes.—Dillwynia obovata *Labill.*: D. myrtifolia *Smith.*

Engraving.—Bot. Mag., t. 1274.

Specific Character.—Leaves lanceolate, or obovate-lanceolate, mucronate. Pedicels axillary, twin. Appendages of wings very short. (*G. Don.*)

Description, &c.—A pretty little plant, with numerous flowers, disposed among the leaves like those of the Mezereon. It seldom grows more than a foot high, and it has numerous leaves, each terminating in a sharp point, and in shape somewhat resembling those of the Myrtle. The plant is a native of New Holland, and was introduced in 1803.

2.—EUTAXIA PUNGENS *Sweet.* THE SHARP-LEAVED EUTAXIA.

Synonyme.—Dillwynia pungens *Cun.*

Engravings.—Sweet's Flora Austriaca, t. 28; Paxt. Mag. of Bot., vol. iii., p. 245; and our *fig.* 5, in Pl. 23.

Specific Character.—Leaves scattered, or verticillate, acicular, somewhat recurved, ending in a pungent mucro, glabrous, with revolute margins.

Description, &c.—A very ornamental plant, with dark-orange flowers and long slender leaves. It is a very free-growing plant, and strikes readily from cuttings.

OTHER SPECIES OF EUTAXIA.

E. BAXTERI *Hort.*

An evergreen plant, of a loose rambling habit of growth, with abundance of orange-yellow flowers.

GENUS XIV.

PULTENÆA *Smith.* THE PULTENÆA.

Lin. Syst. DECANDRIA MONOGYNIA.

Generic Character.—Calyx five-cleft, bilabiate; lips equal in length, bibracteolate at the base; bracteoles sometimes adhering to the tube. Ovary sessile, two-seeded. Style subulate, ascending. Stigma simple. Strophiola of the seed with the lobes cut behind. (*G. Don.*)

Description, &c.—A genus of very pretty little Australian plants, rarely exceeding a foot in height, and having very pretty yellow flowers. The name is given in honour of Dr. Pulteney, who wrote some works relating to botany soon after the time of Linnæus.

1.—PULTENÆA DAPHNOIDES *Smith.* THE DAPHNE-LIKE PULTENÆA.

Engravings.—Bot. Mag., t. 1394; Bot. Rep., t. 98.

Specific Character.—Heads of flowers terminal. Leaves obovate-oblong, quite glabrous, smooth, three times longer than they are broad, ending in a pungent mucro.

Description, &c.—Though this species is by no means so ornamental as many others belonging to the genus, I have thought it advisable to describe it at full length, because it was the first that received the name of Pultenæa. It is a pretty little plant, with a crowded head of orange-yellow flowers slightly marked with red. The leaves are also handsome, being broad and smooth, and they terminate in a sharp mucro or point. The plant is a native of New South Wales, where it is found in the neighbourhood of Port Jackson, and whence it was introduced in 1792.

2.—PULTENÆA CORDATA *Hook.* THE HEART-SHAPED PULTENÆA.

Engraving.—Bot. Mag., t. 3443.

Specific Character.—Leaves cordate-ovate, each armed with a sharp mucro, somewhat fleshy, concave, and smooth. Stipules rough.

Description, &c.—A very ornamental species, with abundance of pale-yellow flowers, and somewhat fleshy leaves. The stem and branches are of a reddish-brown, and the whole plant is not at all ornamental, except when it is in flower. The plant was raised at the Botanic Garden, Edinburgh, in the year 1832, from seeds received from Van Diemen's Land. It is very nearly hardy, and may be grown in the open garden with a slight protection from frost.

OTHER SPECIES OF PULTENÆA.

P. STRICTA *Sims.*

A very elegant little plant, with abundance of bright-yellow flowers, having a purple or dark crimson keel; and leaves covered with white silky down. It is a very pretty little plant, of very easy cultivation, and deserves to be grown in every greenhouse. It is a native of Van Diemen's Land, and was introduced in 1803.

P. SUBUMBELLATA *Hook.*

Another species from Van Diemen's Land, with small heads of orange-yellow flowers. It was introduced in 1832.

P. ROSMARINIFOLIA *Lindl.*

This species was also introduced in 1832, but it was obtained from the south coast of New Holland. The leaves closely resemble those of the Rosemary, and the flowers are somewhat like those of *P. subumbellata*, but with rather larger heads.

There are several other species of Pultenæa, but they are not generally found in greenhouses.

OTHER GENERA OF LEGUMINOUS PLANTS ALLIED TO SOPHORA.

DAVIESIA *Smith.*

A genus of very neat little shrubs, with axillary racemes of small bright-yellow flowers which are produced in very great abundance. The most ornamental species is *D. latifolia*, which has broad flat leaves; and the most curious kind is *D. juncea*, which has no leaves at all. They are all of very easy culture, and they should be grown in light and somewhat sandy peat, with abundant drainage. They are all natives of Australia. The genus was named in honour of the Rev. H. Davies.

MIRBELIA *Smith.*

Dwarf plants, with purple or yellow flowers, which are rather small, and not very ornamental. The genus is named in honour of Professor Mirbel, a celebrated French botanist.

CALPURNIA *Meyer.*

Cape plants, with rather ornamental flowers, which in one species are pink, and in others yellow.

Burtonia, Jacksonia, Viminaria, Gastrolobium, Phyllota, and several other genera, belong to this division of the Leguminosæ.

GENUS XV

HOVEA *R. Br.* THE HOVEA.

Lin. Syst. DIADELPHIA DECANDRIA.

Generic Character.—Calyx bilabiate; upper lip semi-bifid, broad and retuse, lower one three-parted. Keel obtuse. Stamens all connected, the tenth or upper one only more or less free. Legume sessile, roundish, ventricose, two-seeded. Seeds strophiolate. (*G. Don.*)

Description, &c.—Very ornamental little plants, generally with blue or purple flowers, which are small, but produced in great abundance. The genus is named in honour of Hove, a Polish botanist. The form and colour of the flowers are very nearly the same in all the species.

1.—HOVEA CELSI *Bonpl.* CELS'S HOVEA.

Synonyme.—Platychilum Celsianum *Del.*

Engravings.—Bot. Reg., t. 280; Paxton's Magazine of Botany, vol. iii., p. 241; The Botanist, t. 40.

Specific Character.—Leaves lanceolate, and somewhat rhomboid, bluntish, and mucronate; peduncles axillary, many-flowered; branches, calyxes, and bracteas rather pilose. (*G. Don.*)

Description, &c.—This plant is generally considered the most beautiful of the genus, from the brilliant colour and great abundance of its flowers. It was first raised in Europe from Australian seeds by M. Cels, a French nurseryman. The species requires care in its cultivation, as it is easily killed by excess of either drought or moisture, but it amply repays the care taken of it. It was introduced in 1818.

2.—HOVEA PUNGENS *Benth.* THE PRICKLY HOVEA.

Engravings.—Paxt. Mag. of Bot., vol. vi., p. 101; The Botanist, t. 164; and our *fig.* 6, in Pl. 23.

Specific Character.—Stem terete, branched, villous. Leaves linear, pungent, sessile, convolute at the margins, indistinctly reticulated, smooth. Flowers axillary.

Description, &c.—This species, though very inferior in beauty to *H. Celsi,* has yet very pretty flowers, which are produced in great abundance, and its habit of growth is extremely neat and compact. It is easily known, from being the only species of the genus which has a branched stem, and which has very narrow leaves, ending in a sharp prickle. The species was introduced in 1838.

OTHER SPECIES OF HOVEA.

H. LONGIFLORA *R. Br.*

A species with small purplish flowers, and very long leaves, which are convolute on the margins, and covered with brown down on their under side. It was introduced in 1805. It was from this plant that the genus was named.

H. LINEARIS *R. Br.*

A very pretty little plant, introduced, under the name of *Poiretia linearis,* in 1796. It is of a very delicate habit of growth, and has a remarkably slender stem.

H. LANCEOLATA *Hook.*

A very slender plant, with the flowers produced in pairs. Introduced in 1805.

H. PURPUREA *Sweet.*

A very handsome plant, with large purple flowers, the standard of which has a dark shade at the base. This species may be planted in the open ground, but it requires protection in frosty weather. It succeeds best when planted in a conservatory. It was introduced in 1820

H. VILLOSA *Lindl.*

This plant has large blue flowers, and woolly, or, rather, shaggy leaves. It is nearly allied to *H. purpurea,* which it resembles in the large size and general appearance of its flowers It appears to have been first introduced in 1824, and again in 1832.

H. CHOROZEMÆFOLIA *Dec.,* and H. ILICIFOLIA *Cunn.*

These two species were placed by Sweet in the genus *Plagiolobium.* They are both very ornamental plants, remarkable for the rich dark purple colour of their flowers, as well as for their ornamental leaves. They are both natives of King George's Sound, whence they were introduced in 1824.

GENUS XVI.

LALAGE *Lindl.* THE LALAGE.

Lin. Syst. MONADELPHIA DECANDRIA.

Generic Character.—Bracts deciduous, dry. Calyx bilabiate, upper lip bifid, lower lip three-cleft, segments all bristly. Vexillum flat, nearly round, emarginate. Carina obtuse. Stamens all connected, but the tenth half-free.

Description, &c.—There is only one species in this genus, which Dr. Lindley has named after a female mentioned by Horace.

1.—LALAGE ORNATA *Lindl.* THE ORNAMENTAL LALAGE.

Engravings.—Bot. Reg., t. 1722; The Botanist, t. 141; and our *fig.* 1, in Pl. 24.

Specific Character.—Leaves alternate, simple, stipulate. Flowers axillary.

Description, &c.—A very lively-looking plant, with broad leaves of a rich deep green, and flowers which contain a mixture of yellow, orange, purple, and crimson. It is a native of the south-west coast of New Holland, whence it was introduced in 1835.

GENUS XVII.

PLATYLOBIUM *Smith.* THE FLAT-PEA.

Lin. Syst. MONADELPHIA DECANDRIA.

Generic Character.—Calyx bracteate, bilabiate; upper lip bifid, roundish, large. Stamens all connected. Legume pedicellate, compressed, flat, winged on the back, many-seeded.

Description, &c.—All the species belonging to this genus are very ornamental little Australian plants with yellow flowers, which have the standard red at the base. The name of the genus alludes to the shape of the pods, which are broad, and very flat. Some of the species are natives of Van Diemen's Land.

GENUS XVIII.

BOSSIÆA *Vent.* THE BOSSIÆA.

Lin. Syst. MONADELPHIA DECANDRIA.

Generic Character.—Calyx bilabiate; upper lip large, semi-bifid, obtuse. Stamens all connected. Legume compressed, flat, pedicellate, many-seeded, with the margin thickened on both sides. Seeds strophiolate. (*G. Don.*)

Description, &c.—A genus of very singular plants, generally without leaves, but having flat-winged stems. The flowers are principally yellow, but have a mixture of brownish-red and purple, like the other Australian plants belonging to this division. The name was first given to the genus in honour of a French botanist, one of the fellow-travellers of the unfortunate La Peyrouse. Many of the species belonging to this genus are included by some botanists in *Platylobium.*

GENUS XIX.

GOODIA *Salisb.* THE GOODIA.

Lin. Syst. MONADELPHIA DECANDRIA.

Generic Character.—Calyx bilabiate, both lips about equal in length; upper ones semi-bifid, acute. Vexillum flat, large. Stamens all connected. Carina truncate, two-edged. Legume pedicellate, compressed. Seeds strophiolate. (*G. Don.*)

Description, &c.—Another genus of leguminous Australian plants, which closely resemble the leafy species of the genus *Bossiœa.* The genus was named in memory of Peter Good, collector of seeds and plants for the Kew Gardens, who died in New Holland while in pursuit of plants.

GENUS XX.

SCOTTIA *R. Br.* THE SCOTTIA.

Lin. Syst. MONADELPHIA DECANDRIA.

Generic Character.—Calyx five-toothed, imbricated with bracteas, with the teeth rather unequal. Vexillum complicated, short. Wings equal in length to the keel. Stamens all connected. Legume pedicellate, compressed, with the margin thickened on both sides. Sides three or four, strophiolate. (*G. Don.*)

Description, &c.—There are only two species in this genus, both of which are ornamental plants. The name was given in honour of Dr. Robert Scott, formerly Professor of Botany in Dublin.

1.—SCOTTIA DENTATA *R. Br.* THE TOOTHED-LEAVED SCOTTIA.

Engravings.—Bot. Reg., t. 1233; The Botanist, t. 134; and our *fig.* 2, in Pl. 24.

Specific Character.—Leaves opposite, sessile, cordate, triangular, toothed; flowers solitary, axillary, on very short pedicels. (*G. Don.*)

Description, &c.—A free-growing branching shrub, with dentate leaves, and rather ornamental flowers. It is a native of the south-west coast of New Holland, whence it was introduced by Mr. Good in 1803; but though it has been so long in the country, it has always been rather scarce in collections. It is not, however, difficult to cultivate, and it is by no means tender.

2.—SCOTTIA ANGUSTIFOLIA *Lindl.* THE NARROW-LEAVED SCOTTIA.

Engraving.—Bot. Reg., t. 1266.

Specific Character.—Shrub much branched; branches rough, with very small warts; smaller ones filiform. Leaves linear-oblong, truncate at the base, glabrous, revolute, unequally dentated, subsessile. Flowers solitary, and axillary.

Description, &c.—A pretty little shrub, with very slender branches, and elegantly-formed leaves. The flowers are large for the size of the plant, and indeed closely resemble those of *S. dentata*. Like the preceding species, it is a native of New Holland: it is tolerably hardy, but cannot well be grown in the open ground, because it flowers in winter. It was introduced in 1825.

GENUS XXI.

TEMPLETONIA *R. Br.* THE TEMPLETONIA.

Lin. Syst. MONADELPHIA DECANDRIA.

Generic Character.—Calyx five-toothed, with the teeth rather unequal. Keel oblong, a little longer than the wings. Stamens all connected, the tenth one sometimes shorter than the others, and nearly free. Anthers uniform. Legume pedicellate, plano-compressed, many-seeded. Seeds strophiolate. (*G. Don.*)

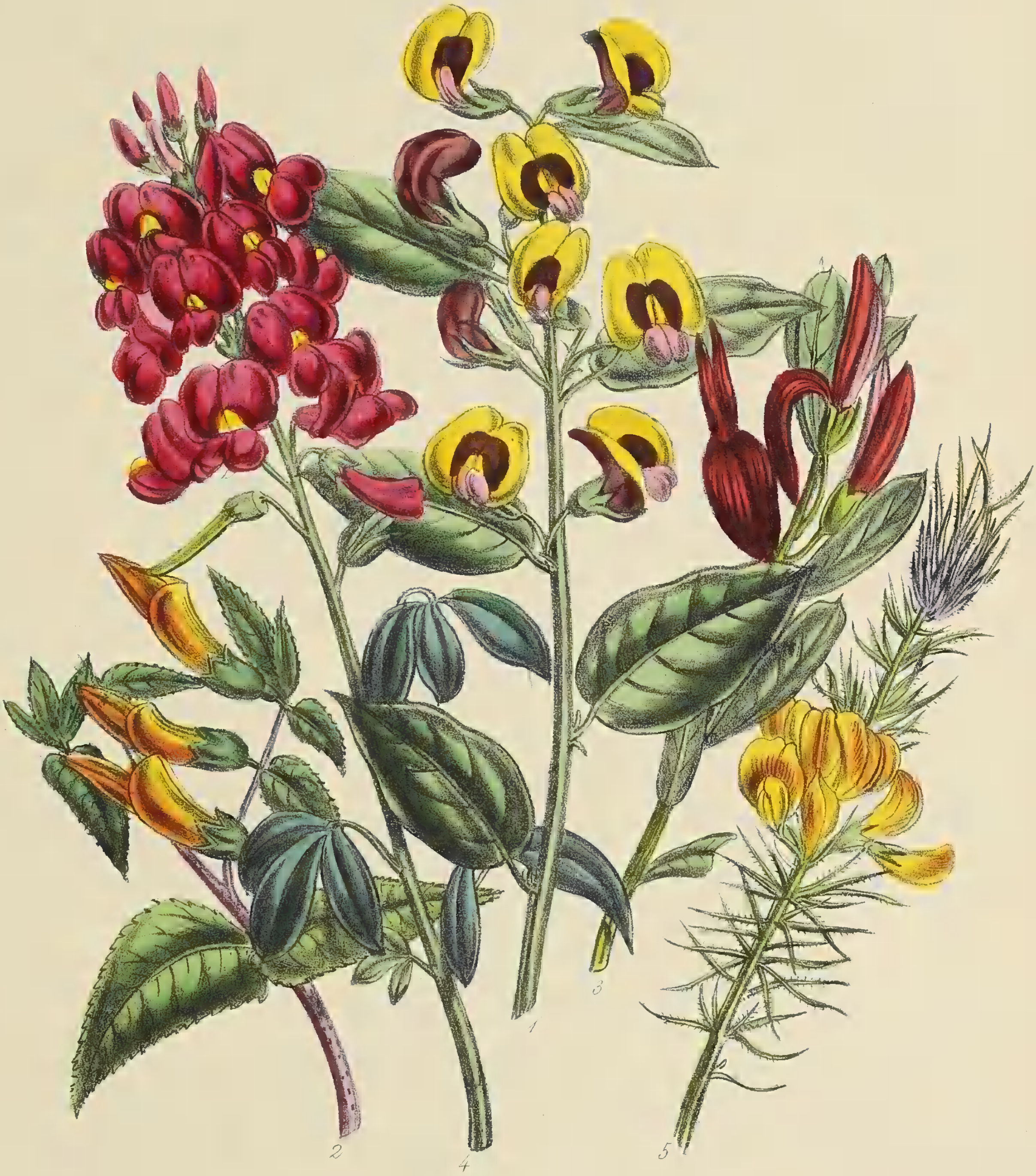
Description, &c.—Australian shrubs, with simple wedged-shaped leaves, which always terminate in a short bristly point. The genus was named in honour of John Templeton, an Irish barrister, residing near Belfast.

1.—TEMPLETONIA RETUSA *R. Br.* THE RETUSE-LEAVED TEMPLETONIA.

Synonyme.—Rafnia retusa *Vent.* **Engravings.**—Bot. Mag., t. 2334; and our *fig.* 3, in Pl. 24.

Specific Character.—Bracteoles rather remote from the calyx. Standard reflexed. Stamens monadelphous.

Description, &c.—This is a very handsome and rather curious plant. The leaves are of a rich dark green, blunt, and rounded at the end, but with the midrib ending in a sharp mucro. The flowers are of a brilliant crimson;



1 Lalage ornata. 2 Scottia dentata. 3 Templetonia retusa? —
4 Crotalaria purpurea. 5 Aspalathus Chenopoda

and the standard, which is rather long, is bent back almost to its base. The stamens are joined into a single column, and the flowers, though large and of a brilliant colour, are not particularly ornamental. The species is an evergreen shrub, a native of the south-west coast of New Holland, whence it was introduced in 1803. It is tolerably hardy, and it flowers in the spring and summer months.

2.—TEMPLETONIA GLAUCA *Sims.* THE GLAUCOUS TEMPLETONIA.

Engravings.—Bot. Mag., t. 2088; Bot. Reg., t. 859; Lodd. Bot. Cab., t. 644.

Specific Character.—Bracteoles approximating the calyx; uppermost stamen shorter than the others, and nearly free. (*G. Don.*)

Description, &c.—A very handsome plant, with bright scarlet flowers and bluish-green leaves, which have a delicate yellow margin round them. They are what is called obcordate; that is, heart-shaped, but with the point of the heart towards the stalk. The species is a native of the south-west coast of New Holland, whence it was introduced in 1818. It flowers in April and May. Both species should be grown in a mixture of sandy loam and peat, and are increased by cuttings struck in sand. Sometimes they are raised from seeds, which frequently ripen in this country.

GENUS XXII.

RAFNIA *Thunb.* THE RAFNIA.

Lin. Syst. MONADELPHIA DECANDRIA.

Generic Character.—Calyx cleft into five to the middle; four upper lobes broadest, sometimes distinct, sometimes variously connected; lower lobe setaceous and very acute. Corolla smooth, with an obtuse keel and roundish vexillum. Stamens monadelphous, with the sheath cleft in front at length. Legume lanceolate, compressed, many-seeded.

Description, &c.—This is a genus of Cape shrubs, all of which have yellow flowers. The leaves and stems generally become black when dried. The genus is named in honour of C. G. Rafn, a Danish botanist.

1.—RAFNIA TRIFLORA *Thunb.* THE THREE-FLOWERED RAFNIA.

Synonymes.—Crotalaria triflora *Berg.*; Borbonia cordata *Andr.*

Engravings.—Bot. Mag., t. 482; Bot. Rep., t. 31.

Specific Character.—Leaves ovate; branches angular; peduncles usually tern in the axils of the upper leaves, one-flowered, and bibracteate. (*G. Don.*)

Description, &c.—A very handsome plant, which has only one disadvantage, and that is, that it is of very short duration, as it seldom lasts above three, or at most four years. It is, moreover, properly speaking, a biennial. The flowers are very large and handsome, and their colour is a golden-yellow. They appear in August and September. The plant is remarkably strong and healthy, and the leaves are beautifully tinged with pink, particularly when they begin to fade. The flowers also assume a rich brown before they fall.

There are many other species of Rafnia; but they are very seldom seen in greenhouses. Some of them have been separated and formed into a new genus under the name of *Vascoa;* so named in honour of Vasco de Gama, the celebrated Portuguese circumnavigator.

GENUS XXIII.

BORBONIA *Lin.* THE BORBONIA.

Lin. Syst. MONADELPHIA DECANDRIA.

Generic Character.—Calyx attenuated at the base, five-cleft, with the lobes about equal in length, terminating each of them in a spiny acumen. Corolla villous on the outside, with the vexillum emarginate at the apex, and the keel obtuse. Stamens all connected into a sheath, which is cleft in front. Stigma capitate, somewhat emarginate. Legume linear, plano-compressed, many-seeded. (*G. Don.*)

Description, &c.—These are Cape shrubs, with simple prickly leaves, which are stem-clasping, and many-nerved at the base. The flowers are all yellow, and they are generally disposed in heads at the tip of the branches. The name of the genus was given in memory of Gaston de Bourbon, Duke of Orleans, and son of Henry IV., who was a great patron of botany.

1.—BORBONIA CRENATA *Lin.* THE CRENATE-LEAVED BORBONIA.

Engraving.—Bot. Mag., t. 274.

Specific Character.—Leaves cordate, roundish, acute, denticulated, many-nerved, and reticulated between the nerves. Leaves and branches glabrous. (*G. Don.*)

Description, &c.—This is rather a curious looking plant, on account of the leaves, which are nearly round, but which look heart-shaped from the decided manner in which they clasp the stem, as they are totally without footstalks. They are hairy, and the hairs, which are very long, form a curious fringe round the margin. The flowers are yellow and rather small. The species was introduced in 1774.

2.—BORBONIA RUSCIFOLIA *Lin.* THE RUSCUS-LEAVED BORBONIA.

Synonyme.—B. cordata *Banks.* Engraving.—Bot. Mag., t. 2128.

Specific Character.—Leaves cordate, many-nerved, minutely ciliated, but otherwise glabrous as well as the branches. (*G. Don.*)

Description, &c.—This plant is so exceedingly different to the last, that it seems scarcely possible to imagine they can belong to the same genus. The leaves of this plant closely resemble those of the Ruscus or Butcher's Broom, and they have only a fringe of hairs so fine and short that they are scarcely perceptible. The flowers ar rather larger than those of *B. crenata.* The species was introduced in 1790.

There are many other species of Borbonia, but the two just described are the most common in this country.

The small genus *Achyronia* is nearly allied to Borbonia, but it differs in the branches and leaves being covered with chaffy hairs; and hence it takes its name from the Greek word *achyron*, chaff.

GENUS XXIV

LIPARIA *Lin.* THE LIPARIA.

Lin. Syst. DIADELPHIA DECANDRIA.

Generic Character.—Calyx thrust in at the base, with a short tube and a five-lobed limb, the four superior lobes lanceolate and acute, and about equal in length, lower one very long, elliptic, and petaloid. Corolla glabrous, with an oval-oblong vexillum and oblong wings, the one involving the other in æstivation. Keel straight, acute, narrow, two-edged. Stamens diadelphous. Ovary sessile, very short, style filiform. Legume ovate, few-seeded. (*G. Don.*)

Description, &c.—This genus takes its name from *liparos*, brilliant, in allusion to its shining leaves. It was formerly rather extensive, but modern botanists have confined it to one species.

1.—LIPARIA SPHÆRICA *Lin.* THE GLOBE-FLOWERED LIPARIA.

Synonymes.—Borbonia sphærica *Lam.*; Leucadendron splendens *Burm.*
Engravings.—Bot. Mag., t. 1241; Lodd. Bot. Cab., t. 642.
Specific Character.—Flowers capitate. Leaves lanceolate, nerves smooth.

Description, &c.—A very singular plant, the petals of the flowers of which fall soon, and leave the stamens, which give the plant more resemblance to a Myrtle than to any of the Leguminosæ. It is a native of the Cape of Good Hope, whence it was introduced in 1783, and it flowers in July.

GENUS XXV.

PRIESTLEYA *Dec.* THE PRIESTLEYA.

Lin. Syst. DIADELPHIA DECANDRIA.

Generic Character.—Calyx nearly equally five-lobed, somewhat bilabiate. Corolla glabrous, with a roundish vexillum, which stands on a short stipe, falcate obtuse wings, and a two-edged convex keel which is curved on the back. Stamens diadelphous. Style filiform. Stigma capitate, sometimes furnished with an acute tooth behind. Legume sessile, plano-compressed, oval-oblong, apiculated by the style, four to six-seeded. (*G. Don.*)

Description, &c.—The plants contained in this genus are all Cape shrubs, with entire leaves and yellow flowers, which are disposed either in heads, umbels, or spikes. The name of the genus was given in honour of Dr. Priestley.

1.—PRIESTLEYA HIRSUTA *Dec.* THE HAIRY PRIESTLEYA.

Synonyme.—Liparia hirsuta *Thunb.*
Engraving.—Bot. Reg., t. 8.
Specific Character.—Leaves obovate-oblong, glabrous. Branches, bracteas, and calyxes hairy. Racemes of flowers somewhat capitate. Bracteas inclosing the pedicels, and rising up round the flowers, with hard black points.

Description, &c.—A very handsome and rather singular plant, a native of the Cape of Good Hope, whence it was introduced in 1792. It is chiefly remarkable for the hard black points which terminate the flower-leaves.

2.—PRIESTLEYA VESTITA *Dec.* THE CONCAVE-LEAVED PRIESTLEYA.

Synonymes.—Liparia vestita *Thunb.*; L. villosa *Andr.*
Engravings.—Bot. Mag., t. 2223; Bot. Rep., t. 382.
Specific Character.—Leaves ovate, concave, obtuse, nerveless, glabrous above, but clothed with hairy wool beneath, as well as the calyxes and bracteas. Flowers capitate. (*G. Don.*)

Description, &c.—The young shoots of this plant have the appearance of the shoots of some kinds of Cactus, from the very curious manner in which they are completely covered with leaves laid one upon another like scales, the margins being distinctly marked by a very curious fine white silky fringe; the singular appearance of each leaf being increased by each being concave. The species was introduced in the year 1800, and it is well deserving of cultivation for its singularity.

There are many other species of the genus, all of which are very curious plants, but they are very seldom seen in collections. They should all be grown in a mixture of sandy loam and peat, but they do not require to be watered so freely as the Australian kinds of Leguminosæ; for if they are watered much over their leaves, it is sure to kill them. Only the very young tops of the shoots should be made into cuttings, and they should be planted in pure white sand, the bell glasses which cover them being frequently taken off and wiped, or else the plants will damp off.

GENUS XXVI.

HALLIA *Thunb.* THE HALLIA.

Lin. Syst. MONADELPHIA DECANDRIA.

Generic Character.—Calyx five-cleft, with the segments about equal. Keel obtuse. Stamens monadelphous, with the sheath complete. Legume compressed, membranous, two-valved, one-seeded. (*G. Don.*)

Description, &c.—This genus contains only very small Cape shrubs or herbaceous plants, with purple flowers. They are not at all remarkable for their beauty, and certainly scarcely worth cultivating at the present day, when so many really handsome flowers have been introduced The genus is named in honour of Berger Martin Hall, a pupil of Linnæus.

GENUS XXVII.

CROTALARIA *Lin.* THE CROTALARIA.

Lin. Syst. MONADELPHIA DECANDRIA.

Generic Character.—Calyx five-lobed, somewhat bilabiate; upper lip bifid, lower lip trifid. Vexillum large, cordate. Keel falcate, acuminated. Filaments all connected with the sheath, cleft in front. Style bearded laterally, pubescent. Legume turgid, with the valves ventricose, usually many-seeded, pedicellate. (*G. Don.*)

Description, &c.—This is a very large genus, the plants composing which bear, however, so much resemblance to each other as to be very easily recognised. They have generally yellow flowers, and palmately compound leaves, which have usually three leaflets. Some of them are annuals, some perennials; some require a greenhouse, others a stove; and some will grow in the open air. The name of *Crotalaria* is derived from the Greek word for a castanet, because the seeds rattle in the pods when dry, and make a noise like a castanet.

1.—CROTALARIA PURPUREA *Vent.* THE PURPLE CROTALARIA.

Synonyme.—C. elegans *Donn.*

Engravings.—Bot. Mag., t. 1913; Bot. Reg., t. 128; and our *fig.* 4, in Pl. 24.

Specific Character.—Leaves ternate; leaflets obovate, retuse. Racemes terminal.

Description, &c.—A small shrub, growing very erect, and generally producing very few branches. Though this species is called the Purple Crotalaria, its flowers are of a fine crimson. It is a native of the Cape of Good Hope, whence it was introduced in 1709. It flowers early in the spring, and continues producing a succession of blossoms all the summer. It is easily propagated by cuttings.

2.—CROTALARIA PULCHELLA *Andr.* THE PRETTY CROTALARIA.

Engravings.—Bot. Mag., t. 1699; Bot. Rep., t. 417.

Specific Character.—Leaflets linear-lanceolate, acute, longer than the petioles, clothed with adpressed pubescence beneath, as well as the branches and petioles. Racemes terminal. Legume cylindrical, many-seeded, tapering into a stipe at the base. (*G. Don.*)

Description, &c.—This is a very showy species, from the large size of the flowers and the slenderness of the leaves. It was introduced from the Cape of Good Hope in the year 1800, and when grown in the free ground it attains a very large size. When this is the case it makes a very ornamental plant, particularly when it is covered with its immense yellow flowers.

There are several other greenhouse species of Crotalaria, but they are generally less ornamental than those above described.

Hypocalyptus is a small genus consisting of a single species, with very ornamental flowers. It is a native of the Cape of Good Hope, whence it was introduced in 1823.

Viborgia is another genus of Cape shrubs, the flowers of which are generally yellow.

Loddigesia is a genus consisting of a single species, with ornamental pinkish flowers, which are produced all the summer. It was introduced in 1802.

Dichilus is another genus of Cape shrubs, similar to the last, but none of the species appear to have been yet introduced.

Lebeckia is a genus of Cape shrubs with the habit of *Genista.* There are several species, all of which are ornamental plants with yellow flowers.

Sarcophyllum is a genus containing only one species, which is a native of the Cape, with yellow flowers; introduced in 1812.

GENUS XXVIII.

ASPALATHUS *Lam.* THE ASPALATHUS.

Lin. Syst. MONADELPHIA DECANDRIA.

Generic Character.—Calyx with the tube hardly attenuated at the base, five-toothed or five-cleft, with the lobes about equal. Vexillum on a short stipe. Carina two-edged. Stamens monadelphous, having the sheath cleft above. Legume oblong, usually oblique, few-seeded. (*G. Don.*)

Description, &c.—This is a very large genus, all the species of which, with only one exception, are shrubby, and they are all natives of the Cape of Good Hope. The name of *Aspalathus* is said to be derived from two Greek words, signifying not to extract; in allusion to the annoyance occasioned by the thorny leaves with which these plants abound, and which it is difficult to extract when they have entered the flesh

1.—ASPALATHUS CARNOSA *Thunb.* THE FLESHY-LEAVED ASPALATHUS.

Engraving.—Bot. Mag., t. 1289.

Specific Character.—Leaves fasciculate, fleshy, terete, glabrous. Flowers lateral and terminal. Calyx bracteate.

Description, &c.—A very pretty little plant, with fleshy cylindrical leaves, and rather large, yellow flowers. As in all the other species of the genus, the leaves are produced in tufts. The species flowers in May and June. It was introduced in 1795.

2.—ASPALATHUS CHENOPODA *Lin.* THE GOOSE-FOOT ASPALATHUS.

Synonymes.—Genista ericoides *Seb.*; Nepa capensis *Ray.*

Engravings.—Bot. Mag., t. 2225; Lodd. Bot. Cab., t. 316; and our *fig.* 5, in Pl. 24.

Specific Character.—Plant hispid. Leaves fasciculate, subulate, and ending in a sharp rigid mucro. Flowers capitate, terminal. Style long, permanent.

Description, &c.—A very singular-looking plant, covered all over with thin hairs, and having the branches beset with little tufts of sharp spine-like leaves, those nearest the branches being much shorter than the others. The flowers are large, and yellow tinged with red; and the styles, which are very long, remain on after the flowers have fallen, looking like little horns projecting from the tufts of leaves which terminate the branches. The plant was introduced in 1759. It flowers in July and August, and if planted in the free ground in a conservatory, it forms a very handsome shrub.

OTHER SPECIES OF ASPALATHUS.

A. ARANEOSA *Thunb.*

A very curious shrub, with long, pendulous, woolly branches. The flowers are white, with a slight tinge of blue, and are ornamental. The species was introduced in 1795.

A. PEDUNCULATA *L'Her.*

This is perhaps the least ornamental species in the genus. The flowers are of a pale yellow, and are produced on long footstalks. The plant was introduced in 1775.

There are many other species, but they are seldom seen in collections.

GENUS XXIX.

CYTISUS *Dec.* THE CYTISUS.

Lin. Syst. MONADELPHIA DECANDRIA.

Generic Character.—Calyx bilabiate; upper lip usually entire, lower one somewhat tridentate. Vexillum ovate, large. Carina very obtuse, inclosing the pistil and stamens. Stamens monadelphous. Legume compressed, many-seeded, glandless. (*G. Don.*)

Description, &c.—The genus Cytisus is well known, from the Laburnum and other hardy ornamental plants which belong to it. Very few of the species require a greenhouse, but those that do are highly ornamental. The name of *Cytisus* is derived from Cythnus, one of the Cyclades, the first species named belonging to the genus having been found there.

1.—CYTISUS ÆOLICUS *Guss.* THE ÆOLIAN CYTISUS.

Engravings.—Bot. Reg., t. 1902; Sweet's Brit. Flow. Gard., 2nd series, t. 382.

Specific Character.—Plant hoary. Branches terete. Leaflets oval, tomentose at the margin. Flowers ternate, sub-bracteate, racemose. Calyx membranaceous, campanulate. Legume smooth.

Description, &c.—This plant is a native of the volcanic island of Stromboli, and it is very ornamental, from the great abundance and golden yellow of its flowers. When not in flower, it bears considerable resemblance to *C. proliferus*, but the flowers are quite distinct. It requires protection during the winter, but as it is a large free-growing plant, it succeeds much better when planted in the open ground in a conservatory than when it is grown in a pot. The species was introduced in 1837.

2.—CYTISUS PROLIFERUS *Lin.* THE SILKY CYTISUS.

Engravings.—Bot. Reg., t. 121; Lodd. Bot. Cab., t. 761.

Specific Character.—Stems erect; branches terete, velvety; leaflets elliptical, and are, as well as the calyxes, silky. Flowers lateral, umbellately aggregate. Legume villous. (*G. Don.*)

Description, &c.—This is a fine evergreen shrub with white flowers, a native of the island of Teneriffe, where it was found growing on the mountains, and where it is called Scobon. In this country, when kept in a greenhouse or planted in a conservatory, it will grow to a considerable height, producing a stem upwards of an inch in diameter. The whole plant is pubescent, and has a soft silvery appearance, with long branches hanging downwards on all sides to a length of more than two feet, and covered with such an extraordinary profusion of beautiful white flowers, that the whole plant looks, at a little distance, perfectly white. The species was introduced in 1779.

OTHER SPECIES OF CYTISUS.

C. WELDENII *Host.*

This species, which has been called the Dalmatian Laburnum, grows eight or ten feet high, and forms a very handsome bush, with abundance of yellow flowers. It has been said to differ from the Laburnum chiefly in its flowers being produced, in this country, in short thick racemes; though in its native country the racemes appear to be as long and drooping as the common Laburnum, according to the drawing sent by Baron Welden to Mr. Loudon for the "Arboretum Britannicum." It is well-known that the seeds of several species of Cytisus are injurious, but in *Cytisus Weldenii* the whole plant is poisonous. The plant was introduced in 1840.

C. RACEMOSUS *Webb.*

This species is now discovered to be the same as *Genista bracteolata*, and it is described under that name below.

GENUS XXX.

GENISTA *Lam.* THE GENISTA.

Lin. Syst. MONADELPHIA DECANDRIA.

Generic Character.—Calyx bilabiate, upper lip bi-partite, lower one tridentate, or five-lobed, the three lower lobes nearly joined to the apex. Vexillum oblong-oval. Carina oblong, straight, not always containing the pistil and stamens. Stamens monadelphous. Legume compressed, rarely rather turgid, many-seeded, rarely few-seeded, glandless. (*G. Don.*)

Description, &c.—The word *Genista* is said to be derived from the Celtic word *gen*, signifying a small bush. Most of the species are hardy plants, but some few are sufficiently tender to require a greenhouse in Great Britain. Many of the species are included by some botanists in the genus *Cytisus*, and others in *Spartium*.

1.—GENISTA CANARIENSIS *Lin.* THE CANARY GENISTA.

Synonymes.—G. rhodopnæa *Hort.*; Spartium albicans *Cav.*; Cytisus paniculatus *Lois.*; C. ramosissimus *Poir.*

Engraving.—Bot. Reg., t. 217.

Specific Character.—Leaves ternate, oblong, pubescent beneath, and covered with spreading hairs. Peduncles many-flowered, terminal. Branches angular.

Description, &c.—This is one of the oldest inhabitants of our greenhouses, having been in cultivation ever since 1656. It is a very pretty plant, with glaucous leaves, and a great abundance of yellow flowers. It bears considerable resemblance to a hardy species generally called the Montpellier Cytisus (*Genista candicans*), but it differs in being less hardy. It is a very ornamental species, and when planted in the free ground of a conservatory, it forms a tall upright shrub. The flowers have a slight fragrance, faintly resembling that of the rose.

2.—GENISTA BRACTEOLATA *Link.* THE RACEMOSE GENISTA.

Synonyme.—Cytisus racemosus *Webb.*

Engraving.—Bot. Reg., for 1840, t. 23.

Specific Character.—Whitely pubescent. Leaves ternate; leaflets obovate, very obtuse, and narrower at the base. Racemes terminal, elongated.

Description, &c.—A very handsome species, a native of Teneriffe, whence it was sent home by Philip Barker Webb, Esq., in 1832, under the name of *Cytisus racemosus*, though it was afterwards discovered by him to be the same as the *Genista bracteolata* of Link. The species is very ornamental, and it may be grown readily from cuttings. It does best planted out in the ground of a conservatory, where it forms a handsome bush, covered with fragrant flowers, which continue appearing from about April till the end of the summer.

OTHER SPECIES OF GENISTA.

G. LINIFOLIA *Lin.*

A pretty little plant with silky leaves, which are quite white on the underside, and a profusion of golden yellow flowers. The plant is a native of the South of Spain, and it was introduced in 1786. It is sometimes called *Cytisus argenteus.*

G. VIRGATA *Dec.*

This is a very handsome plant, a native of the Canary Islands, whence it was introduced in 1825. It is very nearly hardy, and will live in tolerably mild seasons in the open border, but it will not resist a severe frost.

GENUS XXXI.

PSORALEA *Lin.* THE PSORALEA.

Lin. Syst. DIADELPHIA DECANDRIA.

Generic Character.—Sepals five, joined together to the middle into a five-cleft, permanent calyx, with the tube usually beset with glands; the lobes acuminated, having the lower one a little more lengthened out than the others. Stamens ten, usually diadelphous, the tenth one is sometimes connected with the others at the base. Legume length of calyx, valveless, one-seeded, sometimes ending in a beak. (*G. Don.*)

Description, &c.—This genus derives its botanic name from a Greek word signifying scurfy, in allusion to the calyx and many other parts of the plant being covered with small tubercles. The flowers are generally blue and white, or purple and white, and they are produced in tufts at the extremity of the branches. The species are generally natives of the Cape of Good Hope, though others come from North America, Eastern Europe, and various other parts of the globe. The plants are generally ornamental, and the flowers are very large in proportion to the leaves. The species are very numerous.

GENUS XXXII.

INDIGOFERA *Lin.* THE INDIGO TREE.

Lin. Syst. DIADELPHIA DECANDRIA.

Generic Character.—Calyx five-cleft, lobes acute. Vexillum subroundish, emarginate. Keel furnished with a subulate spur on both sides, at length bending back with elasticity. Stamens diadelphous. Style filiform, glabrous. Legume nearly terete, two-valved, many-seeded, rarely few-seeded or ovate, one-seeded at the base or subglobose. Seeds ovate, truncate at both ends, and usually separated from each other by a cellular substance. (*G. Don.*)

Description, &c.—Most of the plants belonging to this genus produce indigo, from the pulp or cellular tissue of their leaves. They are generally ornamental, but not so much so as most of the other plants belonging to the order. Many of the kinds are stove plants, and those which will live in a greenhouse in this country are generally natives of the Cape of Good Hope. The species most commonly used for producing indigo (*Indigofera tinctoria*) is found wild both in the East and West Indies, and also in Central Africa, but it requires a stove in Great Britain The name of *Indigofera* signifies indigo-bearer, in allusion to the principal product of the plant.

1.—INDIGOFERA AMŒNA *Ait.* THE PLEASING INDIGO TREE.

Synonymes.—I. purpurea *Hort.*; I. heterophylla *Thunb.* **Engraving.**—Bot. Reg., t. 300.

Specific Character.—Leaves ternate, oval, hairy. Branches cylindrical. Spikes pedunculate. Stipules bristly. Calyx loose. Stem shrubby.

Description, &c.—A branching upright shrub, covered with soft silvery down, which gives the whole plant a greyish hue. The flowers are of a bright rose-colour and very ornamental The species is a native of the Cape of Good Hope, and was introduced in 1774.

2.—INDIGOFERA VIOLACEA *Roxb.* THE VIOLET-COLOURED INDIGO TREE.

Engravings.—Bot. Mag., t. 3348; and our *fig.* 1, in Pl. 25.

Specific Character.—Shrubby. Leaves consisting of six pairs of oblong leaflets. Racemes axillary, shorter than the leaves. Legume erect, rigid, subcylindrical, glabrous, six or ten-seeded.

Description, &c.—A shrub, growing, in the free ground of a conservatory, to the height of five feet, and forming a very showy plant from its flowers, which are violet and rose-coloured. The leaves are pinnate, and consist of five or six pairs of oblong leaflets. The species is a native of India, but it is very nearly hardy in this country. It was introduced in 1820.

OTHER SPECIES OF INDIGOFERA.

I. DOSUA *Dec.*

This plant is very ornamental, from its bright rose-coloured flowers, which are produced in the greatest profusion during the summer months. It was introduced from Nepal in the year 1838, and it flowered for the first time in England in May, 1840.

I. DECORA *Lindl.*

This is a very pretty bush, introduced from China by Mr. Fortune in 1846. It is a native of the North of China, where it forms a dwarf shrub, with pale pink flowers, the standard of which is nearly white. The plant should be grown in sandy peat, and during the summer months it should be supplied with abundance of air and water; while to prevent the leaves from being scorched by the sun, occasional shading will be necessary.

I. AUSTRALIS *Vent.*

A pretty little plant, introduced by Sir Joseph Banks in 1790. The flowers are rather small, and of a reddish purple.

I. STACHYODES *Lindl.*

A handsome species, the flowers of which are rather small, but are produced in a dense spike. The keel is of a bright rose-colour; but the species is most easily distinguished by its leaves, each of which consists of from eighteen to twenty-two leaflets. The plant is a native of the mountainous districts of India, and it was introduced in 1840.

I. NUDA *G. Don.*

This species is a native of the Cape of Good Hope, whence it was introduced in 1814. It is figured in the "Botanical Magazine" under the name of *Lebeckia nuda.*

There are several other species, which are greenhouse plants in this country, but they have generally small flowers, and are not particularly ornamental.

GENUS XXXIII.

SWAINSONIA *Salisb.* THE SWAINSONIA.

Lin. Syst. DIADELPHIA DECANDRIA.

Generic Character.—Calyx bicallous at the base, five-toothed. Vexillum large, flat. Stamens diadelphous. Carina obtuse, rather longer than the wings. Stigma terminal. Style bearded longitudinally, but beardless in front. Legume turgid. (*G. Don.*)

Description, &c.—All the plants belonging to this genus are natives of New Holland, and they are all suffruticose, with pinnate leaves and elongated racemes of crimson or scarlet flowers. The name of *Swainsonia* was given in honour of Isaac Swainson, Esq., who had a private Botanic Garden at Twickenham about the end of the last century.

1.—SWAINSONIA GALEGIFOLIA *R. Brown.* THE GALEGA-LEAVED SWAINSONIA.

Synonymes.—Vicia galegifolia *Andr.*; Colutea galegifolia *Sims.*
Engravings.—Bot. Rep., t. 139; Bot. Mag., t. 792.
Specific Character.—Suffruticose, erect. Leaves with nine pairs of oval leaflets, which are somewhat emarginate. Pedicel of the legume somewhat elongated.

Description, &c.—A very ornamental plant, with a shrubby stem and herbaceous flexible branches. The flowers are large, and of a bright scarlet; but the leaflets are very small. The pod is inflated, and is produced on a long pedicel. The seeds are black, shining, and kidney-shaped. It is a free-growing plant, producing an abundance of flowers. It is a native of New South Wales, whence it was introduced in 1803. There is a variety of this species with white flowers, which is very ornamental, and which is sometimes called *S. albiflora.*

2.—SWAINSONIA CORONILLÆFOLIA *Salisb.* THE CORONILLA-LEAVED SWAINSONIA.

Engravings.—Bot. Mag., t. 1725; and our *fig.* 2, in Pl. 25.
Specific Character.—Suffruticose, erect. Leaves with from nine to eleven pairs of obovate emarginate leaflets. Pedicel of legume a little shorter than the permanent filaments. (*G. Don.*)

Description, &c.—A very ornamental species, with abundance of rose-coloured flowers, which are produced in succession nearly all the summer. It is a native of New Holland, and was introduced by Sir Joseph Banks in 1802.

OTHER SPECIES OF SWAINSONIA.

S. GREYANA *Lindl.*

This is a very pretty half-herbaceous species with dull-brownish hoary leaves, from the axils of which, a profusion of large purple flowers with a white eye appear in the summer. The plant is a native of New Holland, whence it was introduced in 1845 by Captain Grey, in compliment to whom it is named. It may be easily increased by cuttings of the young shoots taken off in the early part of the summer.

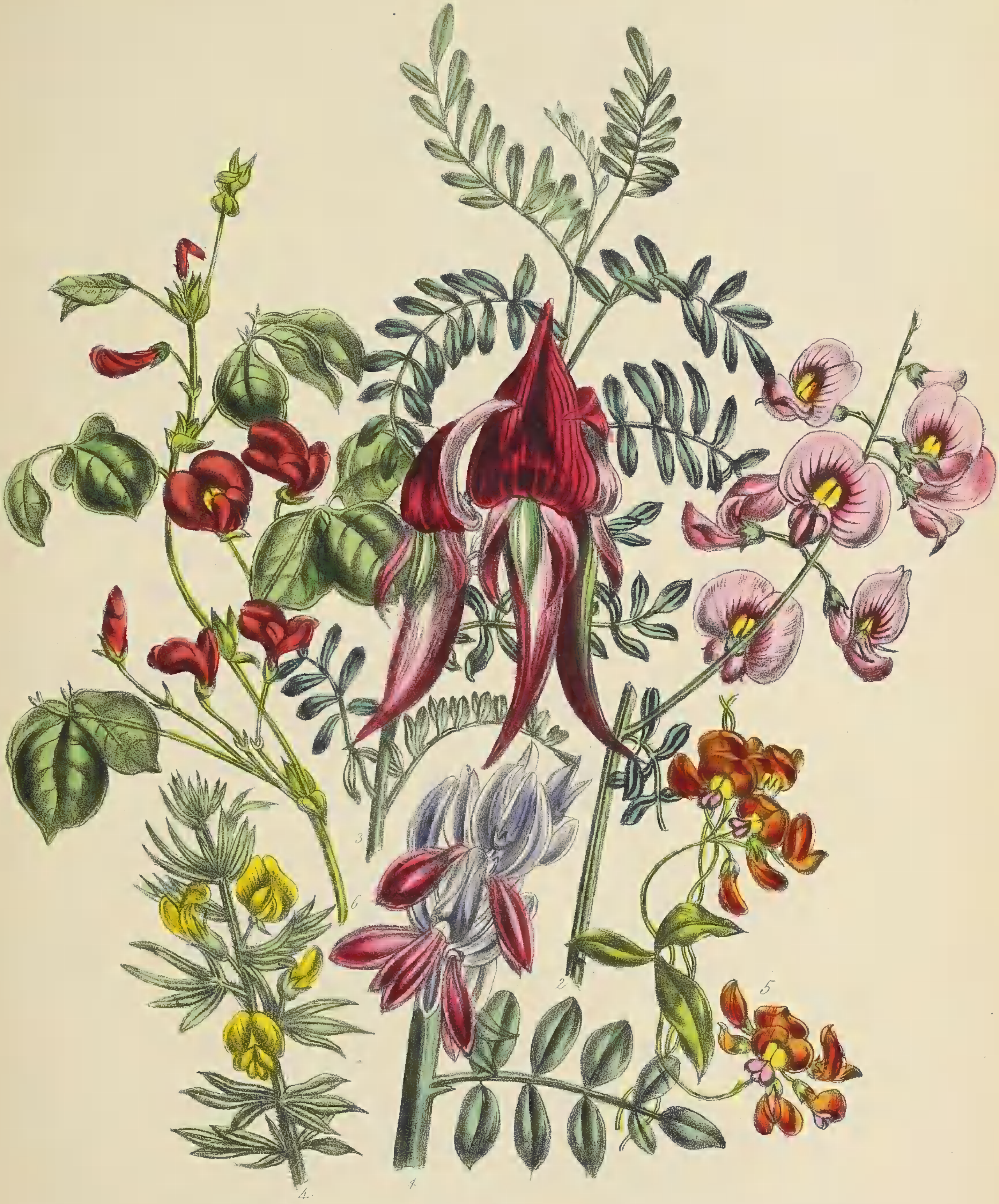
GENUS XXXIV.

LESSERTIA *Dec.* THE LESSERTIA.

Lin. Syst. DIADELPHIA DECANDRIA.

Generic Character.—Calyx half five-cleft. Vexillum flat. Keel obtuse. Stamens diadelphous. Stigma capitate. Style bearded transversely in front at the apex, but beardless behind. Legume scarious, indehiscent, compressed, or inflated, the uppermost side the shortest. (*G. Don.*)

Description, &c.—The plants contained in this genus are all delicate little shrubs or herbs which will grow freely in a greenhouse, and which may be raised either by cuttings or from seeds, which they ripen abundantly.



1. Indigofera violacea. 2. Swainsonia coronillæfolia 3 Clianthus puniceus.
4. Adesmia Loudonia. 5. Kennedya coccinea. 6 Physolobium carinatum.

The flowers are small, and generally purple. The name was given to the genus in honour of the late Baron Delessert, a highly cultivated and liberal botanist, who was remarkable, not only for his splendid collection of books, shells, and other objects connected with Natural History, but for the liberality with which he permitted students to have free access to them.

GENUS XXXV.

SUTHERLANDIA *R. Br.* THE SUTHERLANDIA.

Lin. Syst. DIADELPHIA DECANDRIA.

Generic Character.—Calyx five-toothed, nearly equal. Vexillum with replicate sides, short. Keel oblong. Wings very short. Stamens diadelphous. Stigma terminal. Style bearded lengthwise behind and transversely at the apex. Legume inflated, scarious. (*G. Don.*)

Description, &c.—There are only two species in this genus, viz. *S. frutescens* and *S. microphylla.* Both are very ornamental plants with pinnate leaves, and axillary racemes of large scarlet flowers. *S. frutescens,* which is the most common kind, is very nearly hardy. Both species are natives of the Cape of Good Hope. The name of the genus was given in honour of James Sutherland, one of the first Curators of the Botanic Garden at Edinburgh.

GENUS XXXVI.

CLIANTHUS *Solander.* THE GLORY PEA.

Lin. Syst. DIADELPHIA DECANDRIA.

Generic Character.—Calyx campanulate, five-toothed. Vexillum acuminate, reflexed. Wings short, incumbent. Keel longer than the vexillum, cuculate, ventricose, acuminate and recurved at the point. Stamens diadelphous, perigynous, unequal. Style filiform, longitudinally bearded. Legume oblong, acuminate, stipitate, ventricose, leathery, many-seeded, woolly on the inside. Seeds kidney-shaped.

Description, &c.—The name of *Clianthus* is taken from two Greek words, which signify literally glory-flower.

1.—CLIANTHUS PUNICEUS *Solander.* THE CRIMSON GLORY PEA.

Synonyme.—Donia punicea *G. Don.*

Engravings.—Bot. Mag., t. 3584; Bot. Reg., t. 1775; Sweet's Brit. Flow. Gard., 2nd series, t. 397; The Botanist, t. 44; and our *fig.* 3, in Pl. 25.

Specific Character.—Suffruticose, adpressedly pubescent. Leaflets oblong, retuse. Flowers racemose. Calyx five-toothed. Legume smooth.

Description, &c.—A very showy plant, with a woody stem four or five feet high, and covered when in flower with a profusion of large scarlet blossoms. The plant is a native of New Zealand, whence it was introduced in 1832, and where the natives call it "Kowanautukaka," or Parrot's Bill, from the shape of the corolla. It is very nearly hardy, and will grow in the open air in a sheltered situation; but as it is killed by frost, it is much better to plant it in the free ground of a conservatory. It is not at all adapted for growing in pots, as it will not flower till it is of a large size, and it will not grow freely unless it has plenty of room for its roots.

2.—CLIANTHUS CARNEUS *Lindl.* THE FLESH-COLOURED GLORY PEA.

Synonyme.—Streblorhiza speciosa *Endl.*

Engraving.—Bot. Reg. for 1841, t. 51.

Specific Character.—Leaflets in two or three pairs, ovate, very smooth, and shiny. Racemes erect, few-flowered. Vexillum nearly straight.

Description, &c.—This species is a native of Norfolk Island, and some of the smaller islands in its vicinity. It is very inferior in beauty to the common Glory Pea, but it is still worth cultivating for its pink flowers, which bear considerable resemblance to those of the Judas Tree, and its shining evergreen leaves. "It is easily cultivated," says Dr. Lindley, "only requiring a rather strong rich soil, and plenty of room to grow; it will then flower freely; but is not suited for growing in pots, as the plant requires to become large, and have plenty of room before it will flower freely. It strikes freely from cuttings, treated in the ordinary way, and flowers during the earlier parts of the year."

GENUS XXXVII.

CORONILLA *Neck.* THE CORONILLA.

Lin. Syst. DIADELPHIA DECANDRIA.

GENERIC CHARACTER.—Calyx campanulate, short, five-toothed, the two superior teeth approximate, and joined up higher together than the rest. Claws of petals usually longer than the calyx. Carina acute. Stamens diadelphous. Legume nearly cylindrical, slender, separating into oblong one-seeded joints. Seeds ovate or cylindrical.

DESCRIPTION, &c.—Ornamental low shrubs, generally natives of the south of Europe, but some of which require the protection of a greenhouse in this country. The name of *Coronilla*, which is derived from *corona*, a crown, alludes to the disposition of the flowers in heads or umbels.

1.—CORONILLA GLAUCA *Lin.* THE GLAUCOUS-LEAVED CORONILLA.

ENGRAVING.—Bot. Mag., t. 13.
SPECIFIC CHARACTER.—Shrubby, glabrous. Stipules small, lanceolate. Leaflets five or seven, obovate, very obtuse, glaucous, lower ones remote from the stem. Umbels seven or eight-flowered. (*G. Don.*)

DESCRIPTION, &c.—A pretty little plant, which has been common in British greenhouses since the year 1664. It is a native of the south of France and Spain, and it is also found in Sicily. Though it grows wild in a country only a few degrees hotter than our own, it is more tender than many plants which come from warmer climates. The flowers are yellow, and are very fragrant during the day, but they lose their scent at night.

2.—CORONILLA VALENTINA *Lin.* THE VALENTIA CORONILLA.

SYNONYMES.—C. stipularis *Lam.*; C. hispanica *Mill.*
ENGRAVING.—Bot. Mag., t. 185.
SPECIFIC CHARACTER.—Shrubby, glabrous. Stipules roundish, large, deciduous. Leaflets seven or nine, obovate, mucronulate, glaucous, lower ones remote from the stem. Umbels six or eight-flowered. (*G. Don.*)

DESCRIPTION, &c.—A well-known greenhouse plant, with very strong-smelling leaves, the scent of which is equally perceptible at night as in the day. The odour has been compared to that of Rue, and consequently it is thought very disagreeable by most persons, though some actually like it. The plant is a native of Spain, where it was found growing on the road-side, and in other sandy places. It is of easy culture, but it requires to be occasionally cut down, as it is very apt to become drawn up with a naked stem at the bottom.

There are several other species of Coronilla which may be considered as half-hardy, though, as most of them will stand out if they have a slight protection during severe frost, it has not been thought worth while to include them in this collection of greenhouse plants.

GENUS XXXVIII.

ADESMIA *Gill.* THE ADESMIA.

Lin. Syst. DECANDRIA MONOGYNIA.

Generic Character.—Calyx five-cleft, with the segments acute and nearly equal. Corolla papilionaceous. Vexillum complicated above the rest of the petals when young. Keel curved and truncate at the apex. Stamens distinct, approximate. Legume compressed, transversely many-jointed, having the upper suture straight and thickish, but the lower suture is sinuately lobed; joints one-seeded, nearly orbicular, at length separating from each other. Seeds compressed, reniformly orbicular. (*G. Don.*)

Description, &c.—The species included in this genus are South American herbaceous plants, generally with large yellow flowers. They are ornamental, and some of the species are nearly hardy in this country. The name of *Adesmia* is derived from two Greek words, signifying no bond, in allusion to the stamens being free.

1.—ADESMIA LOUDONIA *Hook. et Arn.* MR. LOUDON'S ADESMIA.

Synonymes.—Loudonia anthyllöides *Bert.*; L. superba *Hort.*

Engravings.—Bot. Reg., t. 1720; and our *fig.* 4, in Pl. 25.

Specific Character.—Shrubby, the whole plant covered with a greyish silky down, erect, much branched, and very leafy. Leaves with three pairs of leaflets; leaflets linear-lanceolate, very soft, spreading, longer than the petioles. Peduncles axillary. Calyx five-cleft, equal, covered with silky down. Vexillum silky. Legume three-jointed.

Description, &c.—This plant, which is a native of Chili, was originally supposed to be the type of a new genus, which Dr. Bertero, an Italian botanist, named Loudonia, in honour of my late husband. On examination, however, it was found not to be sufficiently distinct from the other species of Adesmia to authorise its being placed in a new genus; and it is, therefore, considered to be only a species of Adesmia, the compliment to Mr. Loudon being perpetuated by the specific name. The plant is not very ornamental, being small and of a greyish hue, with yellow flowers, which are neither large, numerous, nor of a brilliant colour. It was introduced in 1832.

OTHER SPECIES OF ADESMIA.

A. VISCOSA *Gill.*

A slender upright shrub, the branches and leaves of which feel clammy to the touch, and have a balsamic odour. The leaves are composed of very small leathery leaflets, each of which is curiously crenated; and the flowers, which are of a golden yellow, are twice as large as those of any other species of the genus. The plant is a native of Chili, whence it was introduced in 1832.

A. USPALLATENSIS *Gill.*

A dwarf thorny shrub, growing about a foot high, and having very small leaves and flowers. It is a native of Chili, and was introduced in 1832 with the other species.

GENUS XXXIX.

KENNEDYA *Vent.* THE KENNEDYA.

Lin. Syst. DIADELPHIA DECANDRIA.

Generic Character.—Calyx bilabiate, upper lip bidentate, lower one trifid, equal. Corolla papilionaceous, with the vexillum emarginate, recurved, but not bent back from the carina. Stamens diadelphous. Stigma obtuse. Legume linear, compressed, transversely many-celled from cellular membranous dissepiments. Seeds strophiolate. (*G. Don.*)

Description, &c.—This genus was formerly a very extensive one, comprising almost all the ornamental Australian plants with climbing stems and pea flowers. It has, however, within the last few years, been divided by Baron Hügel into four genera, viz. Hardenbergia, comprising all the species which have small bluish or lilac flowers; Zichya, the flowers of which are broad and reddish with very short keels; Physolobium, the species of which have bladdery capsules; and Kennedya. The species which are left in this genus, have all large and handsome scarlet flowers, and are well deserving of cultivation. The name of *Kennedya* was given to the genus by Ventenat in honour of Mr. Kennedy, late of the firm of Lee and Kennedy, nurserymen, Hammersmith.

1.—KENNEDYA RUBICUNDA *Vent.* THE REDDISH KENNEDYA.

Synonymes.—Glycine rubicunda *Curt.*; Caulinia rubicunda *Mœnch.*
Engraving.—Bot. Mag., t. 268.
Specific Character.—Leaflets three, ovate. Stipules ovate-lanceolate, spreadingly reflexed. Peduncles usually three-flowered. Legumes hairy. (*G. Don.*)

Description, &c.—This was one of the first species of Kennedya that was introduced; and it is remarkable for the intense colour of its flowers, which are of so deep a scarlet on the inner side that they look almost black, while on the outside they are quite pale. The species, when first introduced, was supposed to belong to the genus *Glycine*, and it is figured under that name in the "Botanical Magazine." It is easily raised from seeds, and is of such quick growth and simple culture, as to retain its place in greenhouses, notwithstanding the great number of more ornamental species that have been introduced.

2.—KENNEDYA PROSTRATA *R. Br.* THE PROSTRATE KENNEDYA.

Synonymes.—Glycine coccinea *Curt.*; Kennedya coccinea *Hort.*
Engraving.—Bot. Mag., t. 270.
Specific Character.—Leaflets three, obovate, villous, undulated, and rather repand. Stipules and bracteas cordate, apiculated, spreading. Peduncles one or two-flowered. Legume pubescent. (*G. Don.*)

Description, &c.—This species is very distinct, from the peculiarity of its flowers being generally produced singly, and thus it is easily distinguished from *Zichya coccinea*, which is frequently called *Kennedya coccinea* in the nurseries as well as this plant. This species is also distinguished by being a trailer instead of a climber like most of the other species, and it is likewise much more tender. It flowers from April till June, and frequently perfects seeds in this country. It is a native of the east coast of New Holland, whence it was introduced in 1790.

3.—KENNEDYA NIGRICANS *Lindl.* THE DARK PURPLE KENNEDYA.

Engraving.—Bot. Reg., t. 1715.
Specific Character.—Leaflets ovate-oblong, obtuse, solitary or ternate. Racemes simple. Flowers erect. Calyx hairy, narrowed at the base.

Description, &c.—This is a very remarkable species, from its purple flowers and large broad leaves The flowers are also erect instead of drooping. It was introduced in 1835; but it is very seldom seen in collections.

4.—KENNEDYA MARRYATTÆ *Lindl.* MRS. MARRYAT'S KENNEDYA.

Engravings.—Bot. Reg., t. 1790; The Botanist, t. 83.
Specific Character.—Leaflets in threes, oblong, obtuse, undulated, shorter than the petioles; the young shoots very hairy. Stipules and bracteas cordate, apiculated. Peduncles four-flowered.

Description, &c.—This species is very nearly allied to *Kennedya prostrata;* but it differs in all the parts of the plant being larger, and in the flowers being produced in fours, instead of being solitary, or in pairs. The young shoots are also so thickly covered with hair as to be quite shaggy. It is a very ornamental plant, and was obtained from the Swan River in 1835. The seeds were sent home by Sir James Stirling to his brother-in-law, Mr. Robert Mangles.

GENUS XL.

HARDENBERGIA *Benth.* THE HARDENBERGIA.

Lin. Syst. DIADELPHIA DECANDRIA.

Generic Character.—Calyx campanulate, very slightly five-cleft, somewhat bilabiate. Standard orbicular, emarginate, without any appendages at the base, and with a very short claw. Wings and keel extremely small. Keel curved and blunt at the extremity. Stamens distinctly diadelphous, the free stamen straight and not articulated. Ovary with several ovules. Style short. Stigma capitate, usually with a short tuft of hair. Legume linear, flattened, almost divided into several cells by a cellular substance. Seeds with a strophiola.

Description, &c.—This genus consists of six species of climbers, which have been separated from the old genus Kennedya, and which are all natives of extra-tropical Australia. They are all remarkable for their flowers, which are small and of a pinkish purple, and which are produced in upright spike-like racemes, each raceme containing many flowers. The name of *Hardenbergia* was given to the genus in honour of the Countess Hardenberg, sister of Baron Hügel.

1.—HARDENBERGIA MONOPHYLLA *Benth.* THE SINGLE-LEAVED HARDENBERGIA.

Synonymes.—Kennedya monophylla *Vent.*; Glycine bimaculata *Curt.*; G. virens *Sol.*

Engravings.—Bot. Mag., t. 263; Bot. Reg., t. 1336; The Botanist, t. 84.

Specific Character.—Leaves having only one leaflet; leaflet lanceolate or oblong, subcordate at the base. Peduncle much longer than the raceme.

Description, &c.—There are two varieties of this species, one of which has a longer raceme and paler flowers than the other. Both are pretty little plants, easily distinguished from the other species of the genus by the leaves, which are simple, or, rather, according to the language of botanists, consist of a single leaflet, which is heart-shaped at the stalk. The flowers are very small, and either of a very dark bluish-purple, in which case they are produced in a short close raceme, or of a very pale pinkish-lilac, in which case they are produced in a loose, very long raceme. The species was introduced in 1790, and as it is very easily cultivated, it has been common in greenhouses ever since.

OTHER SPECIES OF HARDENBERGIA.

H. COMPTONIANA *Benth.*

This species was originally called *Glycine Comptoniana* in honour of the Marchioness of Northampton. It was afterwards removed to the genus *Kennedya*, and it is now included in *Hardenbergia.* It is a very pretty plant, with a long raceme of small dark purple flowers, and it is one of the most common plants in greenhouses, as it is of remarkably easy culture. The plant is a native of the neighbourhood of Port Jackson, in New Holland, and it was introduced in 1803. It has a twining habit, and when planted in the free ground of a conservatory, it will grow to a very considerable height.

H. OVATA *Benth.*

This species very closely resembles *H. monophylla*, the principal difference being in the size of the solitary leaflets, which are large and broad in this species. The flowers are also somewhat larger, but they are in smaller racemes, and altogether the plant is not particularly ornamental.

H. CORDATA *Benth.*

This plant, like the last, closely resembles *H. monophylla* in its solitary leaflets; but they are still larger than in the last species. They look, indeed, like broad, cordate, simple leaves. The flowers are produced in rather larger racemes, and are very ornamental.

H. MACROPHYLLA *Benth.*

A handsome species, nearly allied to *H. Comptoniana;* but much larger in all its parts, particularly in its leaves, each of which has three leaflets, and very long footstalks. It is a very ornamental species, and was introduced from the Swan River in 1835.

GENUS XLI.

ZICHYA *Hügel.* THE ZICHYA.

Lin. Syst. DIADELPHIA DECANDRIA.

Generic Character.—Calyx campanulate, bilabiate; upper lip bidentate, lower lip three-cleft. Vexillum unguiculate, broadly orbiculate, emarginate, reflexed. Wings oblong, adhering as far as the middle to the keel. Keel curved, obtuse. Stamens distinctly diadelphous, the separate stamen having a straight filament not articulated at the base. Ovary containing several ovules. Style short, ascending, and ending in a subcapitate stigma. Legume oblong, linear, compressed, leathery, and separated internally into several cells by a cellular substance. Seeds with a strophiola.

Description, &c.—The species included in the genus *Zichya* are easily distinguished from all the others which compose the old genus *Kennedya* by the flowers being disposed in heads or umbels. The flowers themselves are also easily distinguished by the breadth and shortness of the standard. All the species of *Zichya* are very ornamental, and they all grow freely and produce abundance of flowers. The stems are extremely slender, and where they are not trained, but left to grow in a state of nature, five or six become twisted together. The name was given to the genus by Baron Hügel, in honour of the Countess Molly Zichy Ferraris, now Princess Metternich.

1.—ZICHYA COCCINEA *Hügel.* THE SCARLET ZICHYA.

Synonyme.—Kennedya coccinea *Vent.*

Engravings.—Bot. Mag., t. 2664; Sweet's Flora Austriaca, t. 23; The Botanist, t. 120; and our *fig.* 5, in Pl. 25, under the name of Kennedya coccinea.

Specific Character.—Leaflets obovate or oblong, the upper leaves sometimes lanceolate. Peduncles axillary, usually much longer than the leaves, and bearing at the extremity a head or umbel of from six to twelve nodding flowers. Calyx divided to near the middle into five lanceolate pointed teeth, of which the two upper ones are joined somewhat higher up than the lower ones. Keel nearly as long as the wings. Style scarcely dilated at the extremity.

Description, &c.—A very pretty species, chiefly distinguished by its very slender stems, which are twisted together in a very graceful, though somewhat negligent, manner. The species is a native of Australia, whence it was introduced in 1803, and it is of very easy culture, except that the plants require to be frequently repotted, and that they should never be planted in the open air during summer. The plant is propagated by cuttings, which require a little management. "In the spring a plant should be selected for the purpose, from which all the flower buds should be taken as they appear; and all the shoots should be stopped as they begin to grow, until young shoots are emitted from their joints. These must be taken with a heel of the old stem, be planted in sand, and placed in heat."

2.—ZICHYA PANNOSA *Hort.* THE CLOTHED-LEAVED ZICHYA.

Engraving.—Paxt. Mag. of Bot., vol. viii., p. 147.

Specific Character.—The whole plant thickly covered with soft downy hair. Stem strong, scarcely climbing. Leaves on long petioles, ternate. Leaflets oblong, mucronate. Flowers in dense heads or umbels on very long peduncles.

Description, &c.—This species is very distinct from most of the others, from the strength and thickness of its stems, which when young can almost support themselves. The leaves are also much larger than in any of the other species; and the flowers, which are in very dense heads, have a scarlet standard with a yellow spot in the centre, and the wings and keel purple. The plant requires a loamy soil, and it should be repotted once, if not twice, a year. Specimens trained spirally round a barrel-shaped trellis are said, in "Paxton's Magazine," to have a much better appearance and to flower better than those which are supported erect, or trained to the rafters of a greenhouse. The species was introduced about 1840.

OTHER SPECIES OF ZICHYA.

Z. TRICOLOR *Hort.*

This plant is very nearly allied to *Z. pannosa*, and, like that species, it was introduced from the Swan River, about 1840. The principal differences between the plants are, that in *Z. tricolor* the heads of flowers are much less dense, the stems of the plants are weaker, and the flowers larger.

Z. INOPHYLLA *Hügel.*

A very showy and strong-growing species, with large heads of scarlet flowers, which have a very peculiar appearance, from the calyx of each separate flower being thickly covered with short black hair. The leaflets of this species are remarkably large. It is a native of New Holland, and was introduced about 1826. It is a very free-growing species, and when planted in the free ground of a conservatory, it will soon attain a height of four or five feet.

Z. GLABRATA *Hügel.*

This is a pretty little plant, with very small clusters of flowers, slender wiry stems, and smooth leaves, which are almost entirely destitute of hairs. The species was introduced in 1833.

Z. SERICEA *Hügel.*

This species was figured under the name of *Kennedya dilatata* in the "Botanical Register" for 1832. It is most nearly allied to *Z. inophylla*, which it resembles in the black hairs which clothe the calyx of its flowers, but they are not so conspicuous as in the previously mentioned species. It was introduced in 1830.

GENUS XLII.

PHYSOLOBIUM *Benth.* THE PHYSOLOBIUM.

Lin. Syst. DIADELPHIA DECANDRIA.

Generic Character.—Calyx campanulate, bilabiate, five-toothed. Vexillum broadly orbiculate, spreading, somewhat hardened at the base, longer than the wings. Wings adhering to the keel for about half their length. Keel curved, obtuse, shorter than the wings or equal to them. Stamens distinctly diadelphous, the upper one free; filaments straight, and without any joint; anthers all alike. Ovary with several ovules. Style short, ascending. Stigma capitate. Legume oblong, imperfectly divided into several cells by a cellular substance which at length disappears. Seeds strophiolate.

Description, &c.—This is one of the genera into which the old genus Kennedya was divided. The name of *Physolobium* signifies a bladdery or inflated pod.

1.—PHYSOLOBIUM CARINATUM *Benth.* THE LARGE-KEELED PHYSOLOBIUM.

Engravings.—The Botanist, t. 183; and our *fig.* 6, in Pl. 25.

Specific Character.—Leaflets obovate, orbiculate, retuse, subundulated at the margin, downy beneath. Stipules and bracts broadly ovate, acuminate, subconnate. Keel quite as long as the wings, very broad, and suddenly curved at the top so as to be blunt at the end. Legume much swollen and hairy.

Description, &c.—This very ornamental plant is one of the small genus Physolobium, the species in which have been separated from Zichya and the other allied genera on account of the pod, which, though partly filled by cellular tissue when the plants are young, becomes hollow between the seeds as they progress towards maturity. The flowers of this species are very ornamental, resembling those of Zichya in form, though they differ in their mode of arrangement, the peduncles being few-flowered. The species is a native of the neighbourhood of the Swan River and the coast of King George's Sound, whence it was introduced in 1840.

2.—PHYSOLOBIUM STIRLINGI *Benth.* SIR JAMES STIRLING'S PHYSOLOBIUM.

Synonyme.—Kennedya Stirlingi *Lindl.*

Engraving.—Bot. Reg., t. 1845.

Specific Character.—Leaves having three leaflets, which are subrotund-ovate. Petiole and stem hairy. Stipules broadly ovate, acute. Bracteas fasciculate or verticillate, sometimes three-lobed, and sometimes forming a small involucre. Flowers in pairs. Calyx and peduncle hairy.

Description, &c.—A trailing plant, a native of the banks of the Swan River, whence it was sent home in 1835, by Sir James Stirling, in compliment to whom it has been named. Of this plant Dr. Lindley observes, that "its thin, broad, pale green leaves, fringed with long weak hairs, and its twin scarlet flowers, sufficiently characterise it;" but that it is also "botanically remarkable for having its bracts collected into a whorl, or even grown together into a little involucre."

GENUS XLIII.

ERYTHRINA *Lin.* THE CORAL TREE.

Lin. Syst. DIADELPHIA DECANDRIA.

Generic Character.—Calyx tubular, with a truncate, somewhat dentate border, or spathaceous. Corolla with a very long oblong vexillum; wings, as well as the dipetalous keel, much shorter than the vexillum. Stamens diadelphous, straight, the tenth one adhering more or less to the rest, but sometimes free, much shorter than the wings, rarely deficient. Legume long, torulose, many-seeded, two-valved. Seeds ovate, having a lateral hilum. (*G. Don.*)

Description, &c.—This is a genus of very showy plants, most of which are natives of hot countries, with very large ornamental flowers. In the West Indies some of the species are known by the general name of Coffee Mamma, because, from their rapid growth and luxuriant foliage, it is customary to plant them in the coffee plantations to serve as a protection to the young coffee plants till they have attained a sufficient size to be safe from the danger of being withered up by the scorching heat of the sun. Some few of the species, which are natives of Mexico and South America, are sufficiently hardy to require only greenhouse heat in this country. The name of *Erythrina* is from a Greek word, signifying red, in reference to the colour of the flowers.

1.—ERYTHRINA CRISTA-GALLI *Lin.* THE COCK'S COMB CORAL TREE.

Engravings.—Smith's Exotic Botany, t. 95; Sweet's Brit. Flow. Gard., t. 214.

Specific Character.—Stems woody. Petioles prickly, glandular. Leaflets oval or ovate, glaucescent, coriaceous, bluntish. Calyx truncate, somewhat bidentate. Stamens nine connected, but with the tenth free. Keel three times the length of the calyx. (*G. Don.*)

Description, &c.—This species, though generally considered to be very common, is, in fact, extremely rare, as it is continually confounded with *E. laurifolia*, which is found in almost every collection under the name of

E. Crista-galli. The fact is, that *E. laurifolia* so closely resembles the present species, that it is difficult to distinguish between them, unless they are seen growing together; and as *E. laurifolia* is much the hardier kind of the two, it is quite natural that it should be the most common. When the two plants are seen growing together in a stove, it will be found that they are very different, as *E. Crista-galli* will, under those circumstances, appear so much the larger and stronger of the two as to render it easy to conceive that it forms in its native country a large tree. When, however, the two plants are grown in a greenhouse, *E. laurifolia* has generally the advantage, as it is much hardier than *E. Crista-galli.* The present species is a native of Brazil, whence it was introduced in 1771.

2.—ERYTHRINA LAURIFOLIA *Jacq.* THE LAUREL-LEAVED CORAL TREE.

Synonyme.—E. Crista-galli *Sims et Ker.*

Engravings.—Bot. Mag., t. 2161; Bot. Reg., t. 313; Paxt. Mag. of Bot., vol. iii., p. 175: all under the name of *E. Crista-galli;* and Sweet's Brit. Flow. Gard., t. 142.

Specific Character.—Stems suffruticose, branched. Branches glabrous, rather prickly. Leaflets petiolate, oblong, acuminated; petioles rather prickly, glandular. Calyx truncate, unidentate. Keel monopetalous. Stamens monadelphous. (*G. Don.*)

Description, &c.—When this species was first introduced from South America in the year 1800, it was supposed to be the same as *E. Crista-galli*, but there appeared some slight degrees of difference which evidently puzzled the botanists of those days. Mr. Jonas Dryander appears to have been the first who suspected it to be different from *E. Crista-galli;* and afterwards the Honourable and Rev. W. Herbert (late Dean of Manchester), when he sent a fine specimen of this plant to be figured in the "Botanical Magazine," remarked, "that it must have been an error to imagine this shrub to be a timber tree in Brazil, where it has probably been confounded with some other species. The flowering branches," he continues, "die back like those of the Tree-Pæony; and although it acquires a woody stem, it does not rise with a continued leader, but the eyes nearest the root break stronger than those higher up the stem." The difference between the two species fully explains these observations, and at the same time proves their accuracy. The true *E. Crista-galli* is a timber-tree in Brazil, and it has elliptic, obtuse, pointed leaves, and strong crooked prickles. It is also tender; and though it will live in a greenhouse, it never flowers so well as when it is kept in a stove. *E. laurifolia*, on the other hand, grows and flowers profusely not only in greenhouse heat, but in the open air. It is, however, never larger, even in its native country, than a suffruticose shrub, which when planted in the open air in Great Britain becomes herbaceous, and is killed down to the ground every winter, though it throws up fresh stems every spring, which are covered with flowers in September. The plant when first introduced was always kept in the stove, but it was afterwards tried in the greenhouse and found to succeed so much better in a moderate heat, that Mr. Milne, of the Fulham Nursery, had the curiosity, in 1823, to plant one in the open air; and since that period it has been frequently tried in similar situations, observing that each plant should be placed deep in the earth in a warm border, backed by a south wall. It is, however, safest to grow the plants in the free soil of a conservatory, where they will be extremely ornamental from their luxuriant growth, and their abundance of sharply-pointed leaves and large rich dark scarlet flowers. In "Paxton's Magazine of Botany," the following directions are given for growing this plant in pots:—"As soon as the plants have done growing, which will be by the latter end of August, cut them down, and set them in a cool greenhouse; keep them quite dry till about the end of November, then pot them in fresh soil, suiting the size of the pot to the size of the plants; they never require one larger than a 16. When potted, water, and set them in a house where the heat is about 60°. In the spring, that is, about the beginning of

March, they will flower in perfection. In May, when they are again out of flower, take the plants and cut them down as before, to five or six eyes, according to the strength of the stems; re-pot them, and place them in the stove until they have taken root, and made shoots from nine to twelve inches, when they must be removed to a house of the temperature of from 55° to 60°, allowing them plenty of light, or the shoots will be apt to draw and become weakly." They should also have plenty of air and moisture, and they will flower freely again in July. The soil for plants treated in this manner should be composed of one part of turfy loam, one part of heath mould or sandy peat, and one part of rotten manure. In this manner plants of the Erythrina may be made to flower twice a-year for two or three years in succession; but it is better after the second year to allow them a winter of rest, as if this is not done the plants will become weak, and the flowers will be small, and of a less brilliant colour. In the open air the plants will flower only once a-year, and it is best to cut them down so as to leave only about four inches of the stem above the ground, and to shelter them by turning over them an inverted flower-pot.

OTHER SPECIES OF ERYTHRINA.

E. HERBACEA *Lin.*

This species is a native of Carolina and Florida, but though most plants from these countries require only greenhouse heat, this species seldom flowers well except it is in a stove; and yet when it is kept too hot, its leaves are generally destroyed by insects.

There are many other species of Erythrina, but they are all stove plants.

SUB-ORDER II.—MIMOSEÆ.

This tribe comprises those plants which have their flowers in compact heads, resembling either spikes or balls, as may be seen in all the Acacias and other allied plants. In these flowers, the stamens are the most conspicuous, and when the flowers are examined separately, their petals are so difficult to be distinguished from the calyx, that most persons who are not botanists imagine that they have no petals at all. There is another peculiarity in these plants, which is, that very frequently what appear to be the leaves are only dilated leaf-stalks, from which the true leaves have fallen; and hence, it is not uncommon to see some of the species partly with entire leaves, and partly with bipinnate leaves, which last sometimes appear to grow on ordinary footstalks, and on other occasions hang loosely to the tip of the dilated footstalks or phyllodia, as they are botanically called. Some of the kinds of Acacia are prickly, the stipules of the leaves being converted into spines; while in other cases the stipules take their ordinary form. Most of the genera belonging to this tribe are stove-plants, and of these the most remarkable are those belonging to the genus *Mimosa*, including the Sensitive Plant and the Gum Arabic Tree, and the genus *Inga*, the flowers of which are remarkable for the great length and the silky appearance of their stamens. The genus *Acacia* contains most of the half-hardy plants included in this tribe.

GENUS XLIV.

ACACIA *Neck.* THE ACACIA.

Lin. Syst. POLYGAMIA MONŒCIA.

Generic Character.—Flowers polygamous. Calyx four or five-toothed. Petals four or five, sometimes free, and sometimes joined together into a four or five-cleft corolla. Stamens variable in number, from ten to two hundred in each flower. Legume continuous, dry, two-valved. (*G. Don.*)

Description, &c.—This genus consists of a great number of species, upwards of three hundred and forty of which have been described and named by botanists. These numerous species are divided into several sections, the heads of which will be given to avoid confusion. The name of *Acacia* is said to be derived from a Greek word signifying to sharpen, in allusion to the stipules of many of the species being hardened into spines.

SECTION I.—PHYLLODINEÆ.

Sectional Character.—Leaves of two forms; those in seedling plants are bipinnate, but in adult plants the leaflets are abortive, and there only remains a dilated petiole, which is called a phyllodium. (*G. Don.*)

Description, &c.—The species contained in this section are all remarkable for having dilated petioles instead of leaves, and they are nearly all natives of New Holland. In some of them the flowers are collected into globular heads, while in others the clusters of flowers form spikes.

§ 1. *Flowers collected into globular heads, which are solitary on the peduncles. Stipules spiny.*

1.—ACACIA ALATA *R. Br.* THE WINGED ACACIA.

Engraving.—Bot. Reg., t. 396.

Specific Character.—Stipules spinose, permanent. Stem bifariously winged. Phyllodia decurrent, one-nerved, ending in a spine at the apex, and with the upper margin furnished with a glandular tooth. Heads of flowers solitary or twin. (*G. Don.*)

Description, &c.—A very curious plant, with the leaves decurrent, or running down the stem, so as to make the plant appear as though it were only a thickened stem with no leaves. The species was introduced in 1803, and it flowers from April till July.

2.—ACACIA DECIPIENS *R. Br.* THE PARADOXICAL ACACIA.

Synonymes.—A. dolabriformis *Coll.*; Adiantum truncatum *Burm.*; Mimosa decipiens *Kœn.*

Engravings.—Bot. Mag., t. 1745, and t. 2244.

Specific Character.—Stipules spinescent, deciduous. Phyllodia triangular, and somewhat trapezoid, with the nerve approximating the lower side, and drawn out into a spine at the apex, the superior margin furnished with one acute gland-bearing tooth. Heads many-flowered, usually solitary. (*G. Don.*)

Description, &c.—There are two varieties of this species, both of which are remarkable for their very curiously formed phyllodia, and for their great profusion of globular heads of flowers. They are both natives of New Holland, whence they were introduced in 1813.

3.—ACACIA ARMATA *R. Br.* THE ARMED ACACIA.

Engraving.—Bot. Mag., t. 1653.

Specific Character.—Stipules spinescent, permanent. Phyllodia obliquely ovate-oblong, quite entire, one-nerved. Branches hairy. Heads of flowers solitary. Legumes velvety. (*G. Don.*)

Description, &c.—This species is exceedingly well known, as it flowers freely when of a small size, and is consequently well adapted for growing in pots. It is a pretty little plant with sharp slender spines, and a great abundance of flowers. It is tolerably hardy and of easy culture; and it will bear the confined air of a living-room better than most other greenhouse plants.

4.—ACACIA BIFLORA *R. Br.* THE TWIN-FLOWERED ACACIA.

Engravings.—Paxton's Mag. of Bot., vol. ix., p. 221; and our *fig.* 2, in Pl. 26.

Specific Character.—Stipules spinescent, permanent. Phyllodia triangular, with one nerve, which approximates the lower side, and is drawn out into a spine at the apex, the superior margin furnished with one gland-bearing tooth. Heads solitary, on short peduncles, two-flowered. (*G. Don.*)

Description, &c.—This is a very neat compact little plant, bearing considerable resemblance to *A. armata* in its habit of growth; but being perfectly distinct both in its leaves and flowers. It generally grows from eighteen inches to two feet high. "The leaves are of a peculiar form, one side of them being nearly wanting, while the other takes a wide curve at its margin, so as to resemble in outline the upper edge or back of a common sickle." The species is of easy culture, only requiring to be grown in a small pot, in a mixture of sandy loam and peat; the pot not requiring to be changed so frequently as in the more strong-growing species of the genus. The species was first introduced in 1803; but it was soon lost, and it was not again brought to this country till 1840. It flowers in February and March, and is, therefore, very valuable, as it is covered with blossom at a time when very few greenhouse plants are in flower. It is rather difficult to strike from cuttings; and, indeed, only the tops of the shoots will succeed, and even these produce roots very slowly.

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OTHER SPECIES OF ACACIA BELONGING TO § 1, WHICH HAVE SPINY STIPULES.

A. DOLABRIFORMIS *Wendl.*

This is a different species from *A. decipiens*, which is sometimes called *A. dolabriformis* in collections; and, in fact, it can scarcely be considered as belonging to this division, as the spines fall off before the flowers, and, indeed, are sometimes wanting. The species was introduced in 1818 but it is not very often to be met with.

A. HASTULATA *Smith.*

The spines of this plant are strong and permanent. and the phyllodia, which are of a very singular and almost triangular shape, are marked by a projecting nerve down the centre which ends in a sharp prickly point. The upper margin is also furnished with an obtuse tooth. The species was introduced in 1824.

A. NERVOSA *Dec.*

The spines on this plant, like those on the last, are very strong and permanent; and the phyllodia are acuminated at both ends, ending at the point in a spine. They have also nerve-formed entire margins. The species was introduced in 1824.

A. ORNITHOPHORA *Sweet.*

The outline of the leaves of this plant gives the form of the body and head of a bird.

A. PLATYPTERA *Lindl.*

This is a very handsome plant, nearly allied to *A. alata*. It was introduced from the Swan River in 1841.

A. DIPTERA *Benth.*

Another plant with winged stems, and abundance of flowers, which, however, are rather pale, and are disposed in small heads. The leaves are covered with woolly hairs. The species was introduced from the Swan River in 1840.

A. paradoxa Dec., *A. genistifolia* Link, *A. juniperina* Willd., *A. asparagoides* Cunn., *A. Brownii* Steud., *A. echinula* Dec., and *A. pugioniformis* Wendl., are all species belonging to this division.
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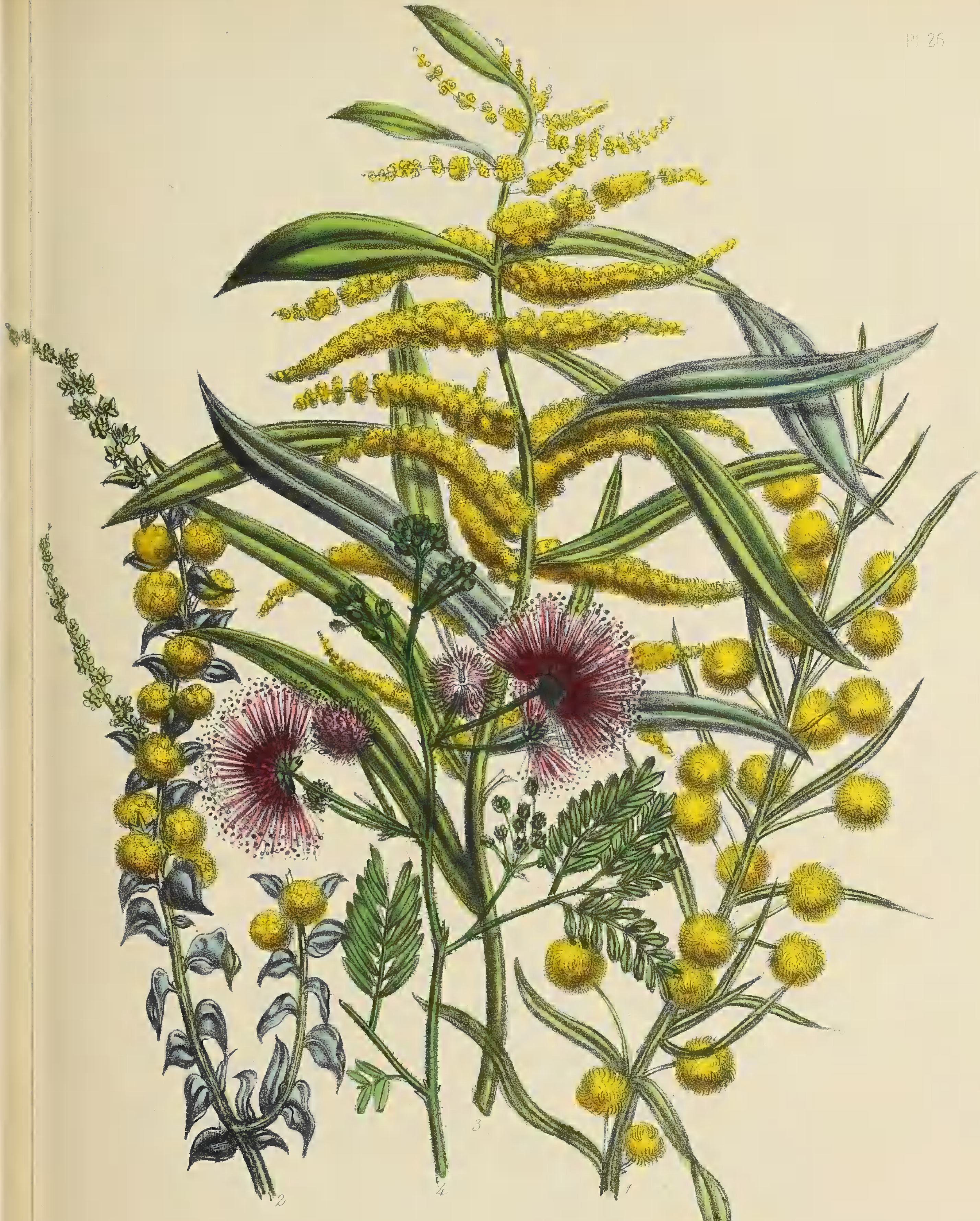

1 Acacia dentifera — 2 Acacia biflora
3 Acacia longifolia — 4 Acacia Lambertiana

Stipules not spinescent.

5.—ACACIA DIFFUSA *Ker.* THE SPREADING ACACIA.

Synonymes.—A. prostrata *Lodd.*; A. Daviesoides *Cunn.*

Engravings.—Bot. Mag., t. 2417; Lodd. Bot. Cab., t. 631; Bot. Reg., t. 634.

Specific Character.—Stipules small, caducous. Phyllodia linear, one-nerved, ending in an oblique acumen, with the spinula continuous along the lower margin. Branches diffusely procumbent, glabrous, angular. Heads of flowers usually twin. (*G. Don.*)

Description, &c.—A rather elegant plant, the habit of which differs widely from the general growth of Acacias, as its branches spread out diffusely and hang down on every side. The heads of flowers are not very large, but they are produced in very great abundance. The species was introduced in 1818.

6.—ACACIA DENTIFERA *Benth.* THE TOOTHED ACACIA.

Engravings.—Bot. Mag., t. 4032; The Botanist, t. 179; and our *fig.* 1, in Pl. 26.

Specific Character.—Branches angular. Phyllodia elongated, linear-lanceolate, falcate, very acute, penni-nerved, not glandular, attenuated at the lower part. Racemes elongated, many-flowered. Legume cylindrical, straight.

Description, &c.—A very graceful species with unusually long racemes of flowers, which are of a full yellow, rather large, and highly fragrant. These racemes, however, Mr. Bentham observes, sometimes become leafy branches, and hence assume quite a different character to other racemes on the same plant. The species takes its name from the dried remains of the stipules, which when young are fine and thread like, attaining a considerable length, but which break off soon after the flowers expand and leave a portion, which thickens and hardens into the form of a double tooth at the base of the leaves. The plant is a native of the banks of the Swan River, whence it was introduced in 1840.

OTHER SPECIES BELONGING TO § 1, THE STIPULES OF WHICH ARE NOT SPINESCENT.

A. SULCATA *Dec.*

A small heath-like shrub, with brownish wrinkled branches, which are densely covered with very slender rigid leaves, furrowed deeply from the base to the point. The peduncles of the flowers are shorter than the leaves; and the heads of flowers are not larger than peas. The species was introduced in 1803 from the south-west coast of New Holland.

A. VERNICIFLUA *Cunn.*

This species is the same as that figured under the name of *A. virgata* in the "Botanical Cabinet" of Messrs. Loddiges. It is a slender twiggy shrub, remarkable for a glutinous substance which covers both the leaves and stems. The flowers are in rather small heads; and the phyllodia are long, falcate, and widely apart. The species is a native of New South Wales, near Bathurst, and it was introduced in 1823.

A. GRAVEOLENS *Cunn.*

This species is nearly allied to the last, but it differs in having a much handsomer foliage, and a very powerful odour. It was introduced in 1833.

A. STRICTA *Willd.*

An upright shrub, with very few branches, large phyllodia, and projecting cup-like stipules, which run down the stem so as to form a kind of wing. The species was introduced in 1790.

A. LANIGERA *Cunn.*

An upright shrub, with the heads of flowers on very short peduncles. The phyllodia are moderately long, ending in a very sharp point. The whole plant is woolly, particularly the pod. The species is found in New South Wales, in rocky places between Port Jackson and Bathurst, and it was introduced in 1838.

A. LINEATA *Cunn.*

A very pretty little shrub, with short linear leaves and small heads of flowers, which are produced on long peduncles. It is found abundantly in the interior of New South Wales, and it was introduced in 1817. It flowers in April and May.

A. BREVIPES *Cunn.*

This species is not very ornamental, as the large size of the phyllodia overpowers the small heads of flowers, which are on such short pedicels as to seem clustered round the stem. The phyllodia are from four to six inches long, and broad in proportion. The species was introduced in 1810, but from its want of beauty it is very little known.

A. UNDULÆFOLIA *Cunn.*

A very handsome shrub, about four feet high, of variable habit, and with innumerable branches, which are of a dark colour and crowded with flowers to their tips. This species was discovered in 1822, "clothing rocky hills near Bathurst;" and it was subsequently found in various dry sandy places at an elevation of about three thousand feet above the level of the sea. It is, however, a remarkable circumstance that though the situation where this species grows is quite as cold as any part of Great Britain, the plant always requires a greenhouse in this country, and is in fact less hardy than any of the other species.

A. TRISTIS *Graham.*

This species is most nearly allied to the common *A. armata*, but it differs from that plant in the drooping disposition of its branches, and the dull almost brownish green of its leaves, which are somewhat long and pointed, so as to add to the drooping character of the whole. The species is a native of New Holland, whence it was introduced in 1828.

A. ELONGATA *Dec.*

A very slender and graceful plant, with drooping branches and long slender leaves, which are curved at the extremity. It was introduced from the Blue Mountains of New Holland, in 1823.

A. CALAMIFOLIA *Sweet.*

A very singular looking plant, which appears to be entirely without leaves, as the phyllodia take the form of very slender branches. On this account it has been called the Bodkin-leaved Acacia. It is a native of the south-west of New Holland, whence it was introduced in 1822. It is very seldom seen in collections.

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§ 2. *Flowers collected into globose heads, and the heads disposed in racemes. Stipules nearly obsolete, never changing into spines.*

7.—ACACIA IMPRESSA *Lindl.* THE FEATHER-NERVED ACACIA.

Synonyme.—A. penninervis *Sieb.*

Engravings.—Bot. Mag., t. 2754; Bot. Reg., t. 1115; and Lodd. Bot. Cab., t. 1319.

Specific Character.—Phyllodia lanceolate, acuminate, subfalcate, with a thickened margin, strongly veined, with one single sunken gland. Flowers five-cleft.

Description, &c.—This is rather an ornamental species, from the great abundance of its flowers, which are nearly white and are collected in globular heads, the heads being disposed in racemes. The phyllodia are of a very dark green. The species is a native of New Holland, whence it was introduced in 1822.

8.—ACACIA MELANOXLYON *R. Br.* THE BLACK-WOODED ACACIA.

Synonyme.—A. arcuata *Sieb.* **Engraving.**—Bot. Mag., t. 1659.
Specific Character.—Leaves lanceolate-oblong, subfalcate. Heads subracemose. Branches angular.

Description, &c.—This species, when planted out, will sometimes live for two or three years in the open air; and even when it is killed to the ground by frost, it will frequently spring up again the following year. It succeeds best, however, when planted in the free ground of a conservatory, where, under favourable circumstances, it will attain the size of a small tree. This species is remarkable for being occasionally found with the pinnate leaves attached to the phyllodia, particularly when the tree is trained against a wall. It is a native of Van Diemen's Land, whence it was introduced in 1808. In its native country it is called Black-wood.

9.—ACACIA MYRTIFOLIA *Willd.* THE MYRTLE-LEAVED ACACIA.

Synonymes.—A. lunata *Lodd.*; Mimosa myrtifolia *Smith.*
Engravings.—Bot. Mag., t. 302; and Lodd. Bot. Cab., t. 324.
Specific Character.—Phyllodia oblong-lanceolate, tapering much at the base, one-nerved, and furnished with one gland in front on the upper margin. Heads few-flowered, racemose; flowers four-cleft.

Description, &c.—This very handsome plant was one of the first species of the genus brought to England from New South Wales, and it was introduced in 1789. In a greenhouse it flowers from February to April; and it is ornamental, not only in its flowers, but in its leaves, which are of a dark green, beautifully tipped with pink.

OTHER SPECIES BELONGING TO § 2.

A. UMBROSA *Cunn.*

A very elegant species, which, in its native land, becomes a tree twenty-five feet high, and, consequently, capable of affording shade. It flowers in spring, and its blossoms, which are of a very pale yellow, almost white, are powerfully fragrant The plant was introduced in 1823. The phyllodia are much larger than in most other species of the genus.

A. VESTITA *Cunn.*

A soft-furred shrub of greyish-green hue, much branched in the upper part. The younger branches are so much covered with hair as to be quite shaggy. The flowers, which in most of the species of this division are of a very pale yellow, almost white, are, in *A. vestita,* of the same deep orange hue so frequently seen in the species belonging to the first subsection of the genus.

A. PROMINENS *Cunn.*

This very showy plant is called in New South Wales the Nepean Wattle Tree, from its being found in the immediate vicinity of the Nepean river, and from Wattle being the general name given to all the Acacia trees in Australia. This species is remarkable for the small size and great number of its heads of flowers, which give it an exceedingly gay and brilliant appearance. It is a tall slender shrub, often growing ten feet high, and it was introduced in 1835.

A. CULTRIFORMIS *Cunn.*

A curious plant, which, though it will attain a large size, will yet flower while very small. It is, however, perhaps more curious than ornamental, as the oddly-shaped leaves, which seem from their name to be supposed to bear some resemblance to the coulter of a plough, are crowded so closely together as to be rather unsightly. The balls of flowers, which are very small, are crowded together in the same manner as the leaves. The species appears to have been introduced about 1837.

A. LINIFOLIA *Willd.*

This species forms a very ornamental shrub, from the delicacy of its branches and foliage, and from the feathery appearance of its flowers when they are fully expanded. They generally appear in the winter time, and are sweet scented. The plant was introduced in 1819.

A. UNCINATA *Lindl.*

A neat greenhouse plant, having at first sight very nearly the appearance of *A. armata*, but differing very considerably when examined in detail. The present species is destitute of spiny stipules, and the phyllodia, which are rather large and broad, terminate in a sharp hooked point. The flowers are of a pale yellow, and the heads are very small. This species was introduced in 1828.

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§ 3. *Flowers disposed in cylindrical spikes.*

10.—ACACIA VERTICILLATA *Dec.* THE WHORLED-LEAVED ACACIA.

Synonymes.—Mimosa verticillata *L'Her.*; M. ulicifolia *Salisb.*

Engraving.—Bot. Mag., t. 110.

Specific Character.—Phyllodia linear, ending in a pungent mucrone, disposed verticillately, probably tern; the middle one being the proper phyllodium, and the others dilated stipules assuming the form of phyllodia. Spikes axillary, solitary, oblong; flowers five-cleft. Young legumes pubescent. (*G. Don.*)

Description, &c.—This is a very singular species, the full-grown plant, when not in flower, bearing a close resemblance to a furze-bush. When, however, the seedlings come up, they have bipinnate leaves, and these frequently remain on near the root even when the plant has attained a considerable size; so that it presents the singular appearance of a furze bush growing out of the stem of a plant having bipinnate leaves. The flowers are of a beautiful yellow, and they are disposed so as to form small and elegant cones. The species is a native of Van Diemen's Land, and it was introduced in 1789. There are several varieties of this species.

11.—ACACIA OXYCEDRUS *Sieb.* THE DOWNY-STEMMED ACACIA.

Synonymes.—A. pugioniformis *Cunn.*; A. taxifolia *Lodd.*

Engravings.—Bot. Mag., t. 2928; Lodd. Bot. Cab., t. 1225; and Paxt. Mag. of Bot., vol. vii., p. 151.

Specific Character.—Petioles lanceolate, attenuated into a long pungent point, glabrous, three-nerved, destitute of a gland at the margin. Stipules subulate. Spikes of flowers axillary, solitary. Rachis pubescent.

Description, &c.—This is a very elegant species, with long spikes of flowers, and numerous rigid dark-green phyllodia, which are marked with three distinct prominent veins, but are without the usual gland at the margin. The species is a native of the Blue Mountains in New Holland, though it is sometimes confounded with the *A. taxifolia* of Willdenow, which is a native of China. It was introduced in 1823.

12.—ACACIA LONGIFOLIA *Willd.* THE LONG-LEAVED ACACIA.

Synonymes.— A. floribunda *Sieb.*; Mimosa longifolia *Andr.*; M. macrostachya *Poir.*

Engravings.—Bot. Mag., t. 1827, and t. 2166; Bot. Rep., t. 207; Bot. Reg., t. 362; Paxt. Mag. of Bot., vol. iv., p. 197; The Botanist, t. 77; and our *fig.* 3, in Pl. 26.

Specific Character.—Phyllodia sublanceolate, attenuated at both ends, alternate, articulated. Spikes of flowers axillary, generally twin, on very short peduncles. Calyx of the flowers four or five-toothed.

Description, &c.—This very handsome species appears, from the great number of times that it has been figured, to be also a popular one, and it is certainly well deserving of cultivation. It was introduced in the year 1792. It is easily propagated by either seeds or cuttings. In its own country (Australia) it forms a tree eighteen or twenty feet high, but in England it is only a moderate-sized bush, unless planted in the free ground of a conservatory. There are two varieties of this species which only differ in the length of the leaves, and both are figured in the "Botanical Magazine." Two plants are also figured under this name in "Paxton's Magazine of Botany," but one of these (see vol. xii., p. 269,) is evidently not even any variety of *A. longifolia*, as it has its flowers in balls and not in spikes. Possibly it may be *A. subulata* Bonpl., the phyllodia of which are very long and linear, and which has the flowers disposed in globose heads arranged in racemes

OTHER SPECIES BELONGING TO § 3.

A. RUSCIFOLIA *Cunn.*

This species is very nearly allied to *A. verticillata*, from which it is distinguished principally by its downy branches, and somewhat paler flowers. It is a very ornamental species, and well deserving of cultivation. It was introduced in 1819.

A. MŒSTA *Lindl.*

This very singular species has been called by Dr. Lindley the Mourning Wattle, on account of the singularly dull and almost blackish-green of its phyllodia. Its flowers are also in very close spikes, and more singular than ornamental. Like most of the other species of the genus, it is a native of Australia, whence it was introduced in 1845.

There are many other species belonging to this division, but as they are not figured in the common botanical periodicals, and as they are very seldom seen in collections, it has been thought unnecessary to describe them here.

SECT. II.—CONJUGATO-PINNATÆ.

Sectional Character.—Leaves with one pair of pinnæ, each pinna bearing few or many pairs of leaflets. (*G. Don.*)

Description, &c.—The species included in this section are very seldom seen in collections, with the exception of the one called *A. pulchella*. The flowers are generally in globular heads.

13.—ACACIA PULCHELLA *R. Br.* THE PRETTY ACACIA.

Engravings.—Lodd. Bot. Cab., t. 212; and Paxt. Mag. of Bot., vol. iv., p. 198.

Specific Character.—Smoothish. Spines stipular, straight, slender. Pinnæ bearing five or seven pairs of oblong-obovate obtuse leaflets Petioles short, bearing a pedicellate gland between the pair of pinnæ Heads of flowers solitary. (*G. Don.*)

Description, &c.—A very pretty little plant, forming a small prickly bush, with great abundance of fragrant flowers, and very delicate pinnate leaves. The flowers are in globular heads, each head being produced alone The species is a native of New South Wales, whence it was introduced in 1803.

SECT. III.—SPICIFLORÆ.

Sectional Character.—Leaves bipinnate, with few or many pairs of pinnæ, each pinna bearing few or many pairs of leaflets. Flowers in spikes or balls. (*G. Don.*)

Description, &c.—In this section are some of the handsomest half-hardy species of Acacia, particularly *A. lophantha* and *A. dealbata*, though the last seems oddly enough placed in a section called *Spicifloræ*, as its flowers are always produced in globular heads.

14.—ACACIA LOPHANTHA *Willd.* THE TWO-SPIKED ACACIA.

Synonymes.—Mimosa distachya *Vent.*; M. elegans *Andr.*

Engravings.—Bot. Mag., t. 2108; Bot. Rep., t. 563; Bot. Reg., t. 361; and Lodd. Bot. Cab., t. 716.

Specific Character.—Unarmed. Leaves bipinnate, with eight or ten pairs of pinnæ, each bearing twenty-five or thirty pairs of lanceolate, but somewhat bluntish, leaflets. Petioles and calyxes clothed with velvety down, with a gland at the base of the petiole and between the two terminal pairs of the petioles of the leaflets. Racemes oblong, axillary, twin.

Description, &c.—This species is easily distinguished by its branches being round and fluted. Its flowers are produced in long spikes or racemes, and when fully expanded they are very ornamental. The plant is a native of the south-west coast of New Holland, whence it was introduced in 1803. It is very nearly hardy, and when planted out in the open air, though it is generally killed down to the ground by the first severe frost, it will throw up fresh shoots in the spring. It looks best planted in the free ground of a conservatory.

15.—ACACIA DEALBATA *Link.* THE MEALY ACACIA.

Synonymes.—A. decurrens *var.* mollis *Ker*; A. affinis *Hort.*; Mimosa decurrens *var. Vent.*

Engravings.—Bot. Reg., t. 371; Floral Cabinet, t. 103.

Specific Character.—Unarmed. Leaves with fifteen pairs of pinnæ, each bearing many pairs of minute, equal, pubescent leaflets, with a perforated gland seated between one of the pairs of pinnæ. Racemes lateral. (*G. Don.*)

Description, &c.—This is one of the most elegant species of the genus, and its fine, close, glaucous foliage has more the appearance of green feathers than the leaves of any other tree whatever. The leaves are also particularly remarkable for a soft greyish bloom, the appearance of which is very well expressed by the epithet *dealbata*, which signifies floury. The species was introduced in 1818, but as it was at first supposed to be a variety of *A. decurrens*, comparatively little notice was taken of it; but within the last ten or twelve years it has become popular, particularly as it is found to be very nearly hardy, and that when it is planted in the open ground it forms a very elegant slender tree, which only requires a slight protection during winter, and which, even if it is killed down to the root by frost, will throw up fresh shoots the following spring. The flowers are produced in globular heads.

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OTHER SPECIES BELONGING TO SECTION 3.

A. SPECTABILIS *Cunn.*

This plant is evidently nearly allied to *A. dealbata*, which it resembles in the softness and delicacy of its foliage, and in the beauty of its numerous heads of flowers, which are of the clearest and softest yellow. It is a native of Wellington Valley and of other places on the east coast of New Holland, but it is decidedly more tender than *A. dealbata*, as it will not live without a greenhouse in this country. It was introduced in 1840.

A. DISCOLOR *Willd.*

This is another species very nearly allied to the last two, which takes its name of *discolor* from the mealy appearance of the leaves, they having a whitish hue on their under surface, which is sometimes changed into a reddish-brown. It is not particularly ornamental, as there are seldom more than twelve flowers in each head, and consequently the heads are small and very inferior in beauty to those of most of the other species of the genus. It was introduced in 1788.

A. ALBIDA *Lindl.*

A very handsome plant, closely resembling *A. dealbata* in the appearance of its leaves, but differing in its flowers, which are disposed in very large solitary balls, instead of being in numerous small globular heads, arranged in racemes. The species was introduced in 1824.
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SECT. IV.—JULIBRISSINÆ.

Sectional Character.—Leaves bipinnate, with few or many pairs of pinnæ, each pinna bearing few or many pairs of leaflets. Flowers with long silky stamens. Anthers glabrous. Stigma simple.

Description, &c.—This section takes its name from the beautiful *Acacia Julibrissin*, or Silk Tree, one of the most lovely of the whole genus. The characteristics of this plant, and, indeed, of the whole section, are the long silky stamens of the flowers, which look like tufts of silk scattered over the whole tree. Many of the species in this division have pink flowers.

16.—ACACIA JULIBRISSIN *Willd.* THE SILK TREE.

Synonymes.—Mimosa arborea *Forsk.*; M. Julibrissin *Scop.*

Specific Character.—Unarmed, glabrous. Leaves with from eight to twelve pairs of pinnæ, each pinna bearing about thirty pairs of dimidiate, oblong, acute, rather ciliated leaflets, with a depressed orbicular gland at the base of the petiole. Heads of flowers pedunculate, forming a terminal, somewhat corymbose panicle. Legumes flat, membranous, glabrous. (*G. Don.*)

Description, &c.—This very beautiful tree is seldom seen in this country, as it is too tender to stand in the open air, excepting in some parts of the south-western counties, and is yet too large to be grown in any moderate-sized greenhouse, as under favourable circumstances it forms a tree thirty or forty feet in height. In Italy it is seen frequently trained against walls, and in other partially sheltered situations, and it is generally admired for its beauty. The flowers are white, delicately tinged with pink, the stamens being flesh-coloured at the apex. The species is a native of Persia, whence it was introduced in 1745.

17.—ACACIA LAMBERTIANA *Don.* MR. LAMBERT'S ACACIA.

Engravings.—Bot. Reg., t. 721; and our *fig.* 4, in Pl. 26.

Specific Character.—Unarmed. Leaves bipinnate, each pinna bearing nine or twelve pairs of oval-oblong leaflets, which are obtuse at each end. Petiole glandless. Heads of flowers three or five together, disposed in a raceme.

Description, &c.—A very handsome plant, a native of Mexico, whence it was introduced in 1820. It is very ornamental, and particularly so when cultivated in the same house with the yellow-flowered species, to which its lilac tassel-like blossoms afford a very agreeable variety.

18.—ACACIA PUBESCENS *Dec.* THE DOWNY-STEMMED ACACIA.

Synonymes.—Mimosa pubescens *Vent.*; M. suaveolens *Donn.*

Engravings.—Bot. Mag., t. 1263; The Botanist, t. 48.

Specific Character.—Unarmed. Branches terete, hairy. Leaves with from three to ten pairs of pinnæ, each pinna bearing from six to eighteen pairs of linear glabrous leaflets. Petiole glandless. Heads of flowers globose, pedicellate, disposed in racemes along the axillary peduncles. (*G. Don.*)

Description, &c.—This is one of the most elegant of all the kinds of Acacia, from the small size and extreme delicacy of its leaves, and the great profusion of its flowers, which grow in small heads about the size of a pea each and are extremely fragrant, especially in the evening, smelling like a Tonquin Bean or fresh-made meadow hay. The species is a native of New South Wales, whence it was introduced in 1790.

19.—ACACIA PENTADENIA *Lindl.* THE FERN-LEAVED ACACIA.

Engraving.—Bot. Reg., t. 1521.

Specific Character.—Unarmed, smooth. Branches angular. Pinnæ in four or five pairs; leaflets about twenty-four to each pinna, oblong, obtuse, with a depressed gland between each pair of pinnæ. Heads on long pedicels, axillary, simple.

Description, &c.—This is a very elegant greenhouse plant, producing its flowers in April, which, though not so showy as those of some of the other species, are yet very pretty, while the foliage of the plant is remarkably elegant. The following are Dr. Lindley's observations on the botanical construction of this species:—"The little glands that are seated upon the petiole between each pair of pinnæ are of a highly curious character; they have the form of a minute cup, and seem as if they were destined to expose some portion of the inner substance of the petiole to the action of the light and air, but for what purpose we are ignorant."

CHAPTER XXV.

ONAGRACEÆ *Lindl.*

Essential Character.—Tube of the calyx adnate to the ovarium the whole length, or only adhering to it at the base, and drawn out beyond the ovarium at the apex; limb from two to four-lobed, but usually four-lobed; lobes valvate in æstivation. Petals equal in number to the lobes of the calyx, and alternating with them, for the most part regular, twisted in æstivation, inserted in the top of the tube of the calyx, rarely wanting. Stamens sometimes equal in number to the petals, but usually twice that number; filaments free, filiform; anthers oblong or ovate. Ovary many-celled, usually crowned by a cup-shaped gland. Style filiform. Stigma capitate or lobed. Fruit capsular, baccate or drupaceous, two or four-celled. Seeds many in each cell, rarely solitary, fixed to the central placenta. Albumen wanting, but the endopleura is sometimes tumid, and appearing like albumen. Embryo straight, with a long terete radicle and two short cotyledons. (*G. Don.*)

Description, &c.—The characteristic of this order which is the most simple and the most easily remembered is, that all the parts of the flower are in fours or twice four, and not in fives or twice five, as is generally the case in most other flowers: as for example, most flowers have five petals to the corolla, and five sepals to the calyx; but in all the plants included in this order there are four petals and four sepals, and either four or eight stamens. The seed-vessel is also not inclosed in the corolla of the flower, but placed below it in what is called the tube of the calyx. There are several other botanical marks of distinction, but those which have been mentioned are the most simple, and easily understood. The name of the order is said to be derived from *Onager*, the old Greek name for *Œnothera*, which is one of the genera included in the order.

GENUS I.

FUCHSIA *Plum.* THE FUCHSIA.

Lin. Syst. OCTANDRIA MONOGYNIA.

Generic Character.—Tube of the calyx adhering to the ovarium at the base, and drawn out at the apex into a cylindrical four-cleft tube, whose lobes soon fall off. Petals four, alternating with the lobes of the calyx, and inserted in the upper part of the tube, very rarely wanting. Stamens eight. Ovarium crowned by an urceolate gland. Style filiform, crowned by a capitate stigma. Berry oblong or ovate-globose, four-valved, four-celled, many-seeded. (*G. Don.*)

Description, &c.—The flowers of the Fuchsia are so well known that it seems scarcely necessary to describe their general form; but yet there are some botanical peculiarities in them which it may be necessary to mention. On looking at the flower it will be observed to consist of a green shining portion close to the stem or footstalk of the flower, which portion is, in fact, the incipient seed-vessel. Next to this is the tube of the calyx, which is generally red, and, consequently, is frequently mistaken for the corolla, particularly as beyond the tube is what is called the limb, which is divided into four petal-like sepals. Below these are seen the real petals, which are generally purple. In some of the species the tube of the calyx is very short (as in *F. microphylla*), while in others (such as *F. fulgens*) it is extremely long. In some species (as in *F. macrostema*) the stamens project far beyond the rest of the flower; and in others they are inclosed by the petals so as not to be perceptible. These striking differences have occasioned the genus Fuchsia to be divided into several sections. The name of *Fuchsia* was given to the genus in honour of Leonard Fuchs, a celebrated Bavarian botanist, who published a work on plants illustrated by engravings, in the year 1542.

Section 1. *Flowers short; the free part of the tube of the calyx shorter than the lobes; stamens inclosed.*

1.—FUCHSIA MICROPHYLLA *H. B. et K.* THE SMALL-LEAVED FUCHSIA.

Engravings.—Bot. Reg., t. 1269; Sweet's Brit. Flow. Gard., second series, t. 16.

Specific Character.—Branches clothed with short hairs. Leaves small, opposite, elliptic-oblong, acute, dentate, glabrous, somewhat ciliated. Calyx funnel-shaped; segments ovate, acuminate. Petals emarginate, two-lobed. Stamens inclosed.

Description, &c.—A very pretty little plant, forming a small, upright, bushy, evergreen shrub with numerous branches and numerous small leaves and flowers. The stem and branches are tinged with a purplish red, and are thickly clothed with very short closely-set hairs. Both the calyx and corolla of the flowers are of a bright red, and, indeed, it is very difficult to distinguish between them. The species is a native of Mexico, where it was found by Humboldt growing on the botanic mountain Jorullo. It flowers nearly all the summer, and is of very easy culture when kept in a greenhouse, but it does not succeed well in the open air in this country even in summer. It was introduced about 1828.

2.—FUCHSIA THYMIFOLIA *Kunth.* THE THYME-LEAVED FUCHSIA.

Synonymes.—F. alternans *Moc. et Sesse;* Lopezia thymifolia *Willd.;* the changeable-flowered Fuchsia.

Engravings.—Bot. Reg., t. 1284; Sweet's Brit. Flow. Gard., second series, t. 25.

Specific Character.—Branches pubescently hairy. Leaves opposite, ovate, or subrotund, obtuse, hairy above, and glabrous below. Calyx nearly funnel-shaped; segments oblong, sharply acute. Petals obovate-oblong, obtuse, entire, sometimes spreading. Stamens inclosed.

Description, &c.—This species is very different from most of the other kinds of Fuchsia, as its petals are sometimes spreading so as to give its flowers quite a different character to those of Fuchsias in general. It is not, however, remarkable for its beauty, as its leaves are generally far apart, and have not the neat compact look of those of *F. microphylla.* It is a native of Mexico, where it is found on the high land at a height of about six thousand feet above the level of the sea. It is, consequently, very nearly hardy in this country, and it will grow freely in the open ground if protected from the frost of winter. It takes its name of Changeable-flowered Fuchsia from the blossoms being at first of a pale green tinged with pink, and gradually changing till they become of a deep red, so that there are many different hues on the plant at the same time. It was introduced at the same time as *F. microphylla.*

3.—FUCHSIA CYLINDRACEA *Lindl.* THE CYLINDRICAL-FLOWERED FUCHSIA.

Engravings.—Bot. Reg., for 1838, t. 66; Floral Cabinet, t. 80; The Botanist, t. 189.

Specific Character.—Branches slightly compressed, somewhat hairy. Leaves petiolate, ovate, obtuse, much waved, rolled back at the margin. Flowers axillary, on long peduncles, sometimes diœcious by abortion. Petals very obtuse, truncate, one-coloured. Style exserted. Stamens inclosed, alternately reflexed.

Description, &c.—This is perhaps the prettiest of all the small-flowered Fuchsias on account of the deep colour of its flowers, the calyxes of which are scarlet tipped with green. This brilliant scarlet is rare among the flowers of the genus, which are generally crimson, and occasionally have even a purplish cast. The petals of many of the species are, indeed, a decided purple; but in *F. cylindracea* they are scarlet with an orange tinge inside. The species is a native of Mexico, whence it was introduced in 1827. It is about as hardy as *F. microphylla,* but it requires more pot-room than that species, and grows best when planted in the free ground of a conservatory.

4.—FUCHSIA LYCIOIDES *Gall.* THE BOX-THORN FUCHSIA.

Synonyme.—F. rosea *Ruiz et Pav.*

Engravings.—Bot. Mag., t. 1024; Bot. Rep., t. 120.

Specific Character.—Stem beset with tubercles. Leaves oval, entire, petiolate. Pedicels axillary, aggregate, shorter than the flowers. Calyx funnel-shaped; segments reflexed, spreading, twice as long as the petals.

Description, &c.—This species differs essentially from most of the other kinds in the flowers being clustered together instead of being produced singly. The flowers are pretty, but certainly not equal in beauty to those of many of the other kinds. This species was introduced in 1796, but it has never become decidedly popular. It is rather more tender than most of the other small-flowered species, as it is a native of Chili.

OTHER SPECIES BELONGING TO SECTION I.

F. PARVIFLORA *Lindl.*

A little insignificant plant, very nearly allied to *F. lycioides*, but with smaller flowers. It is a native of Mexico, whence it was introduced in 1824. It is very nearly hardy, and when grown in the open border only requires protection from severe frost.

F. BACILLARIS *Lindl.*

This species is very nearly allied to *F. microphylla*, but it is distinguished from that plant by not being an evergreen, and by its flowers being somewhat larger, of a paler colour, and the segments of the tube being spreading. Altogether it is a very pretty plant, and is well deserving of cultivation. It appears very nearly hardy. It is a native of Mexico, whence it was introduced in 1829.

Section 2.—Flowers moderately long, the free part of the tube shorter than the lobes or equal in length to them; stamens exserted.

5.—FUCHSIA ARBORESCENS *Moc. et Sesse.* THE TREE FUCHSIA.

Synonymes.—F. amœna *Hort.*; F. hamellioides *Ruiz et Pav.*; F. racemosa *Cer.*

Engravings.—Bot. Mag., t. 2620; Bot. Reg., t. 943.

Specific Character.—Branches glabrous. Leaves three in a whorl, oval-oblong, acuminated at both ends, quite entire. Panicle terminal, trichotomous, nearly naked. Calyx funnel-shaped, with the lobes ovate, acute, and spreadingly reflexed. Petals spreading, apiculate. Stigma four-cleft, radiated.

Description, &c.—This is a very ornamental species of Fuchsia, but it is very seldom seen in collections, as it requires great care in its management; for though it will not stand in the open air, it also will not flower in a confined or over-heated situation, but requires a free circulation of air. In general habit this species is very different from most other kinds of Fuchsia. The species was introduced in 1824.

6.—FUCHSIA MACROSTEMA *Ruiz et Pav.* THE LONG-STAMENED FUCHSIA.

Synonymes.—F. macrostema *var.* recurvata *Hook.*; F. recurvata *Hort.*

Engraving.—Bot. Mag., t. 3521.

Specific Character.—Smooth. Leaves opposite, in threes, ovate, acutely dentate. Flowers axillary, solitary. Stamens exserted. Stigma four-lobed.

Description, &c.—This is a very handsome species from its graceful habit of growth, the delicate green of its large leaves, and the large size and brilliant colour of the flowers. The late Mr. David Don and several other botanists have referred all, or nearly all, the Chilian species to *F. macrostema*, supposing them to be merely varieties of one species. As, however, they are very different in their habit of growth, and in the treatment they require, I have considered it best to describe them under the names by which they are generally known in nurseries, and I have, therefore, placed only this one variety under the name of the species. This kind of Fuchsia is well deserving of cultivation from its free growth, its large and handsome leaves, and the great abundance of its flowers.

7.—FUCHSIA GRACILIS *Lindl.* THE SLENDER FUCHSIA.

Synonymes.—F. decussata *Graham*; F. macrostema var. gracilis *D. Don.*

Variety.—F. g. β. multiflora *Lindl.*, syn. F. tenella *Hort.*

Engravings.—Bot. Reg., t. 847, and t. 1052.

Specific Character.—Branches very slender, pubescent. Leaves opposite, glabrous, longer than the petiole, remotely denticulate. Petals retuse. Stamens exserted, much longer than the flowers.

Description, &c.—This is one of the most graceful of all the kinds of Fuchsia, and it is decidedly the best for training to a single stem so as to form a small tree, and this is done in the following manner:—The first point is to select a healthy young plant that has a strong leader, and, taking it into a forcing-house, to remove its side branches and leaves to about half its height. The plant must then be kept constantly growing for two years, till it has attained the required height; during which period it must be frequently shifted into larger and larger pots, the side shoots and leaves being taken off as fast as they appear. When the plant has acquired the height of eight or ten feet, it may be suffered to have a little rest; that is, it may be taken out of the hothouse and placed in a greenhouse, when it will lose its leaves and cease growing; for it must be observed, that while kept constantly growing by heat and moisture in the hothouse, it will retain its leaves during winter, contrary to the usual habits of the genus. The following spring, when the plant begins to grow, the top should be pinched off, when it will, in the course of a few months, produce a beautiful head covered with flowers; and in this state, if set in the centre of a bed of Fuchsias on a lawn or in a flower garden, it will have a very pleasing effect. This species was introduced about 1820. The variety *multiflora* was introduced about 1824. Both are natives of Mexico. *F. gracilis* is figured under the name of *F. decussata* in the "Botanical Magazine," but this is evidently a mistake, for the true *F. decussata* is as different a plant as possible.

8.—FUCHSIA CONICA *Lindl.* THE CONICAL-TUBED FUCHSIA.

Synonyme.—F. macrostema *var.* conica *D. Don.*

Engraving.—Bot. Reg., t. 1062.

Specific Character.—Leaves in whorls of three or four, ovate, flat, denticulate, glabrous. Flowers pendulous, solitary. Segments of the calyx nearly equal; tube of the calyx conical.

Description, &c.—A very handsome species, introduced from Chili in 1824. It forms a shrub, growing about two feet high, closely covered with leaves, but not producing many flowers. It is a very elegant species, but is now seldom grown, having been quite superseded by its descendant *F. globosa.* The most remarkable part of the flower of this plant lies in the figure of the tube of the calyx, which has a conical form, being much broader at the base than at the apex, in consequence of which it appears divided from the ovarium by a strong contraction.

9.—FUCHSIA GLOBOSA *Hort.* THE GLOBE-FLOWERED FUCHSIA.

Synonyme.—F. macrostema *var.* globosa *D. Don.*

Engravings.—Bot. Mag., t. 3364; Bot. Reg., t. 1556; Sweet's Brit. Flow. Garden, second series, t. 216; and Paxton's Mag. of Bot., vol. ii., p. 75, and vol. iv., p. 75.

Specific Character.—Smooth. Leaves opposite, in threes, petiolate, ovate, acutely denticulate. Flowers axillary, solitary. Petals subrotund. Stamens exserted. Stigma four-lobed.

Description, &c.—This species is perhaps one of the most popular of all the kinds of Fuchsia. It is a dwarf plant, rarely exceeding two feet in height, but spreading widely with nearly horizontal branches, which are of a purple hue and quite smooth. The flowers are very handsome, particularly in the bud, when they look like the drop of a coral ear-ring. The plant is a garden production, and was raised from seeds of *F. conica* about the year 1830. It is very nearly hardy, and if planted in the open border it will flower freely during the summer and autumn, and though it will be killed down to the ground by severe frost in winter, it will shoot up again the following spring with extraordinary vigour. It grows equally well in almost every soil and situation, and is quite uninjured by the smoke of London.

10.—FUCHSIA DISCOLOR *Lindl.* THE PORT FAMINE FUCHSIA.

Synonyme.—F. Lowei *Hort.*

Engravings.—Bot. Mag., t. 3498; Bot. Reg., t. 1805.

Specific Character.— Branches very short, densely compact. Leaves in threes, longer than the petioles, ovate-lanceolate, denticulate, somewhat keeled. Flowers much longer than the leaves. Stamens exserted. Stigma oval.

Description, &c.—This species is decidedly the hardiest of all the kinds of Fuchsia, as it is found in its native country in a temperature of 36°. Even in Scotland, the Port Famine Fuchsia soon becomes a large bush, putting forth innumerable shoots every season, which are seldom injured even by the most severe frosts they ever meet with in this country. The plant is a native of Port Famine in the Falkland Islands, and it was introduced in 1835.

11.—FUCHSIA COCCINEA *Ait.* THE SCARLET FUCHSIA.

Engraving.—Bot. Mag., t. 97.

Specific Character.—Leaves opposite, oval, denticulate. Petals obovate, obtuse.

Description, &c.—This was the first species of the genus that was introduced, as it was brought to England from Chili in the year 1788. The first person who had it for sale was Mr. Lee of the Hammersmith Nursery, and as he sold the plants at a guinea each, it is not difficult to imagine that he made a large sum of money by them. It was at first supposed that the plant would live only in a hothouse, but it was gradually found to succeed in a greenhouse, a cold pit, and the open air, though this species is still far more tender than some of the other kinds, and is easily killed by frost.

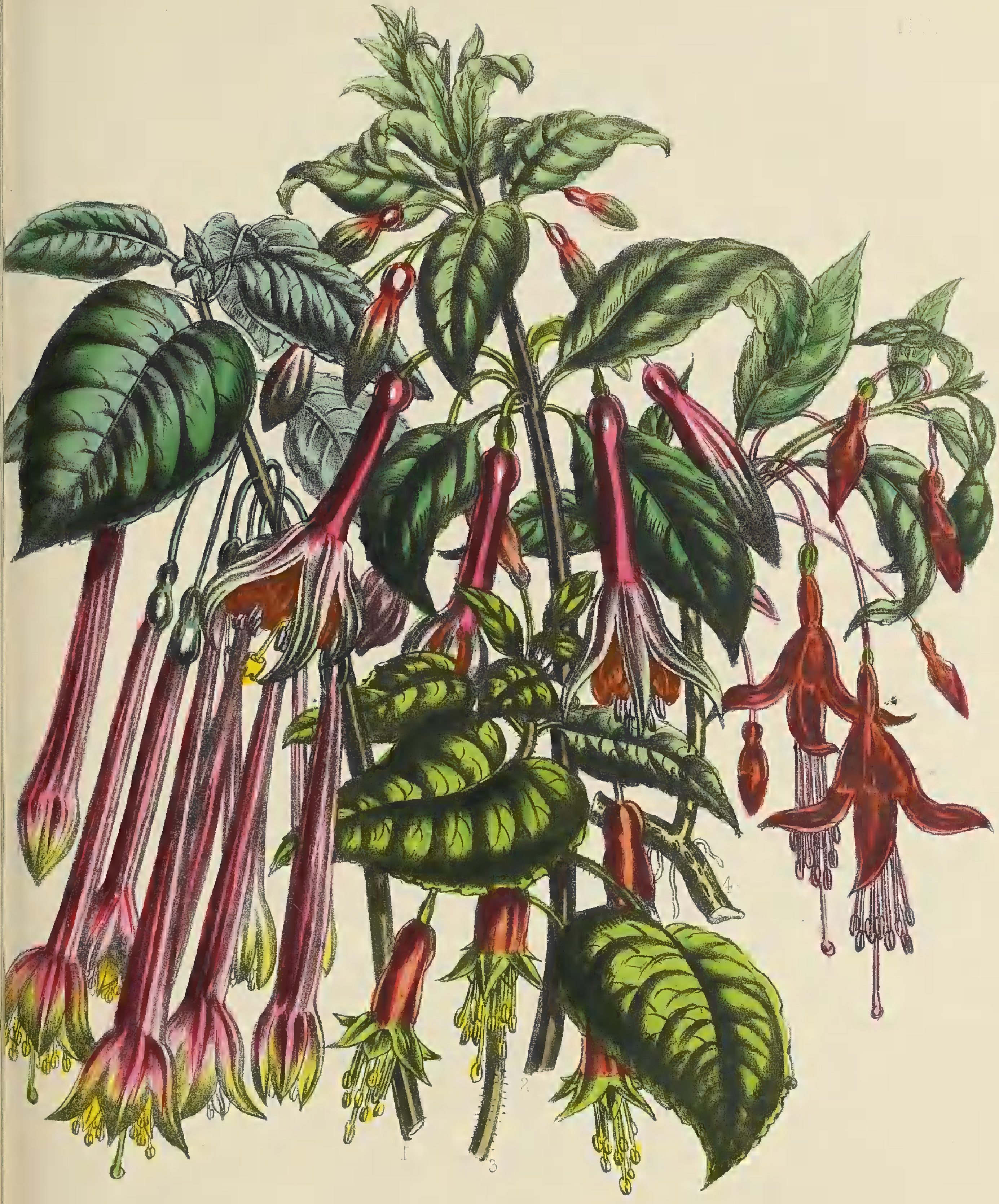
12.—FUCHSIA RADICANS *Miers.* THE ROOTING FUCHSIA.

Synonymes.—F. integrifolia *St. Hilaire*; F. affinis *Camb.*; F. pyrifolia *Presl.*

Engravings.—Bot. Mag., t. 3948; Bot. Reg., for 1841, t. 66; Paxt. Mag. of Bot., vol. ix., p. 27; and our *fig.* 4, in Pl. 27.

Specific Character.—Stem prostrate, rooting. Leaves elliptic, acuminate, slightly denticulate, glabrous, cordate at the base. Flowers axillary, twin, pendulous. Petals wedge-shaped, longer than the tube of the calyx. Stigma capitate. Berry subrotund, oblong.

Description, &c.—This is a long trailing shrub, the stems of which are much branched, often attaining a length of twenty feet and upwards, being about half-an-inch in diameter, of a pale brown, and rough from the irregular splitting of the several coats of bark. The younger branches are purplish and smooth. The joints on the large stem after the first year begin to throw out roots, or, rather, stoloniferous shoots, which take root upon the trees to which the plant clings for support. The calyx is of a bright scarlet, and the tubular part is slightly contracted in the middle. The stamens, which are of a deep red, are considerably longer than the rest of the flower, four of them being much longer than the others. Mr. Miers observes in the "Botanical Register," that he "was greatly struck with this beautiful species when he first met with it in the Organ Mountains in 1829, clinging in long festoons from a very tall tree, and exhibiting abundance of its brilliant flowers." This beautiful plant is a native of Brazil, just within the tropics, but as it grows at an elevation of about three thousand feet above the level



1 *Fuchsia macrantha* 2 *Fuchsia serratifolia*
3 *Fuchsia splendens* 4 *Fuchsia radicans*

of the sea, it is not more tender than most of the other species of the same genus. In this country it proves a free-growing plant, which if planted in the border of a conservatory, and trained round a pillar or a stake, looks remarkably well and flowers freely. To its other peculiarities this species adds considerable beauty of foliage, the under portion of the leaves being of various shades of deep pink and crimson. Mr. Gardner observes, that when it grows by the side of a river, it will climb up the stems of large trees, and flower among the branches at the height of forty or fifty feet from the ground, giving the trees to which it has attached itself the appearance of being Fuchsias themselves. On mountains five or six thousand feet high, however, it loses its climbing habit, and becomes a bush from two to four feet high. It was introduced in 1840.

13.—FUCHSIA ALPESTRIS *Gard.* THE MOUNTAIN FUCHSIA.

Engraving.—Bot. Mag., t. 3999.

Specific Character.—Stem terete, subscandent. Branches covered with a dense pubescence. Leaves opposite, petiolate, oblong-lanceolate, rounded at the base, acuminate, subrevolute at the margin and distantly subdentate, pubescent on both sides and on the petiole; petiole rounded below, channelled above. Peduncles axillary, solitary, one-flowered. Segments of the calyx lanceolate, acuminate, twice as long as the petals, which are wedge-shaped. Berries oblong, four-angled.

Description, &c.—This very distinct species of Fuchsia was found by Mr. Gardner on the Organ Mountains in Brazil, growing in moist, bushy, rocky places at an elevation of upwards of five thousand feet above the level of the sea. In its native place of growth, the plant has a rambling half-climbing habit, the branches being from twelve to twenty feet in length. The plant is, however, very distinct from *F. radicans*, as it is covered entirely with a dense pubescence, and the leaves curl up at the margin, which, as they have a reddish tinge on the lower surface, gives them a very peculiar appearance. The berries are also decidedly quadrangular, instead of being smooth and oblong as is usual in the species of this genus. *F. alpestris* was introduced in 1842.

HYBRIDS BELONGING TO SECTION II.

F. STANDISHII *Hort.*

This is a very handsome plant, raised from seeds of *F. globosa* fecundated by the pollen of *F. fulgens*, and which is remarkable for being completely intermediate between the two species, having the leaves, flowers, and habit of *F. globosa*, with the hairiness and colour of *F. fulgens*. The flowers are also considerably elongated. The hybrid was raised by Mr. Standish, a nurseryman at Bagshot, in the year 1839. In 1841, Mr. Standish reared several other seedlings, which were all hybrids between *F. corymbiflora* and different species of the long-stamened division, and some of these were remarkably handsome, particularly those raised between *F. corymbiflora* and *F. macrostema*.

F. EXONIENSIS *Hort.*

This is a hybrid raised at Exeter, by Mr. Pince, between the flowers of *F. cordifolia* and *F. globosa*. The flowers are remarkably large, with very long lobes to the calyx, which, however, is rather of a dark crimson than of scarlet. The petals are of a very fine, rich, dark purple. The hybrid called *F. longiflora* bears considerable resemblance, in the shape of the flowers, to *F. exoniensis*, but the colours are different; the calyx in *F. longiflora* being scarlet, and the petals crimson.

F. CHANDLERII *Hort.*

This was the first hybrid which had the sepals nearly white, and it appears to have been raised from seeds of *F. fulgens* fertilised by the pollen of some species belonging to the second section. Several other hybrids with a pale calyx have since been raised, the most ornamental of which are *Venus Victrix* and *Smith's Queen Victoria*.

Section 3. Flowers very long; tube of the calyx many times longer than the lobes; stamens generally but little exserted.

14.—FUCHSIA FULGENS *Moc. et Sesse.* THE GLOWING FUCHSIA.

Engravings.—Bot. Mag., t. 3801; Bot. Reg., for 1838, t. 1; Paxt. Mag. of Bot., vol. v., p. 221; and The Botanist, t. 63.

Specific Character.—Branches glabrous. Leaves opposite, cordate-ovate, acute, denticulate. Peduncles axillary, shorter than the flowers; upper ones racemose. Lobes of the calyx ovate-lanceolate, acute. Petals a little shorter than the sepals.

Description, &c.—This magnificent plant, which is now so well known, was introduced in 1837, and was the first of the long-flowered Fuchsias brought to this country. It is a native of Mexico, where it was originally met with by Moçino and Sesse, two Spanish botanists, who inserted a description of it in a work they afterwards prepared, entitled "Flora Mexicana," which, however, never was published; and as they did not introduce the plant, its existence was only known to botanists till it was brought to England in 1837. When it was first seen at one of the Meetings of the Horticultural Society in Regent Street, the sensation it created was beyond all description; and as it was found to be of remarkably easy culture and to grow freely in the open ground, only requiring protection against severe frosts, it has become common with extraordinary rapidity, and there is now scarcely a garden in the kingdom that does not possess a plant of *Fuchsia fulgens*, at least during the summer months

15.—FUCHSIA CORYMBIFLORA *Ruiz et Pav.* THE CLUSTER-FLOWERED FUCHSIA.

Engravings.—Bot. Mag., t. 4000; Bot. Reg., for 1840, t. 70; and Paxt. Mag. of Bot., vol. viii., p. 7.

Specific Character.—Leaves opposite, in threes, petiolate, tomentose, somewhat rough from being reticulately veined. Corymbs terminal, pendulous, many-flowered. Tube of the calyx very long, funnel-shaped; segments of the limb reflexed. Petals free, spreading, acute, longer than the stamens.

Description, &c.—The history of the introduction of this splendid plant is rather curious. Mr. Standish, a nurseryman at Bagshot, received the seeds from some relations he happened to have at Montreal, in Canada, and they informed him that the seeds had been given to them by a friend of theirs who had just arrived from Cusco, in Peru, where he had been for the purpose of trading in saddles. The plant flowered for the first time in England in 1840, when it was found to be *F. corymbiflora*, a species of Fuchsia figured and described in the "Flora Peruviana" of Ruiz and Pavon. In the "Flora Peruviana" this species is said to grow about six or seven feet high, and to be found in shady woods lying to the north-east of Lima. The flowers are certainly very handsome, but the plant itself can scarcely be called ornamental, from its habit of growth. When the flowers first appear they look very well, but they soon drop off, and as fresh ones appear the flower stem elongates, so that at last above the corymb of flowers, a long portion of naked stem appears which is scarred with the remains of the fallen peduncles, and is very unsightly. The plant, contrary to the expectations which were at first entertained of it, is neither so hardy nor so easily propagated as *F. fulgens.*

16.—FUCHSIA CORDIFOLIA *Benth.* THE HEART-LEAVED FUCHSIA.

Engravings.—Bot. Reg., for 1841, t. 70; and Paxt. Mag. of Bot., vol. ix., p. 99.

Specific Character.—Stem glabrous. Leaves opposite, alternately verticillate, longer than the petioles, broad, cordate, acuminate, denticulate, minutely tubercled, but almost smooth beneath. Pedicels axillary, one-flowered, shorter than the leaves. Calyx pubescent; tube much longer than the segments. Petals ovate, very short, acuminate.

Description, &c.—This species has two peculiarites which distinguish its flowers at first sight from those of the preceding long-tubed species, and these are, that the segments of the calyx and the petals are of a fine green, while the tube of the calyx is of a brilliant scarlet, and also the flower is hairy. The foliage is very fine, and as Dr. Lindley observes in the "Botanical Register"—"when the plant is out of flower it looks handsomer than the generality of its race. It was found," he continues, "by Mr. Hartweg, on Xetuch, a volcano in Guatemala, at the height of ten thousand feet above the sea. The berry in the wild state is from one to one inch and a half long, and pleasant to the taste. The Guatemalese call it Melocotoncito, and apparently eat it. The bush itself is said to be five or six feet high." The species was introduced in 1840.

17.—FUCHSIA SPLENDENS *Zuc.* THE SPLENDID FUCHSIA.

Synonyme.—F. cordifolia *var. Hook.*

Engravings.—Bot. Mag., t. 4082; Bot. Reg. for 1842, t. 67; and our *fig.* 3, in Pl. 27.

Specific Character.—Suffruticose, pubescent. Leaves opposite and in threes, longer than the petioles, ovate, acuminate, denticulate. Peduncles filiform, solitary, axillary. Ovarium cylindrical, tomentose. Calyx ventricose at the base; segments triangular, acute, longer than the petals, which are ovate, flat, and spreading. Stamens very much exserted.

Description, &c.—This species is very nearly allied to *F. cordifolia*, and, indeed, the only points in which it differs from that species are, that the tube of the calyx is shorter and inflated at the base, and that the stamens project considerably. The plant is a native of Mexico, where it was found on a mountain ten thousand feet above the level of the sea. The flowers of this plant present the singular appearance of having been compressed as though pinched between the thumb and finger, so that in one direction the diameter of the tube does not appear to be half what it is in the other. The species was introduced in 1841, and it appears as though it would be about as hardy as *F. fulgens.*

18.—FUCHSIA SERRATIFOLIA *Ruiz et Pav.* THE SERRATED-LEAVED FUCHSIA.

Engravings.—Bot. Mag., t. 4174; Bot. Reg. for 1845, t. 41; Paxt. Mag. of Bot., vol. xii., p. 169; and our *fig.* 2, in Pl. 27.

Specific Character.—Shrubby, glabrous. Leaves generally in whorls of three or four, rarely opposite, oblong-lanceolate, acute, serrated, petiolate. Peduncles solitary, axillary, one-flowered. Flower naked. Tube of the calyx elongated; segments spreading above the obovate petals. Stamens exserted, shorter than the style. Stigma club-shaped. Ovarium oblong, glabrous.

Description, &c.—Ruiz and Pavon called this the handsomest species of the genus, and it is, indeed, so extremely beautiful that it is described in "Paxton's Magazine of Botany" in the following words:—"It is a magnificent-looking plant, with a stout erect stem and spreading branches, amply clothed with whorls of large, oblong, rich green leaves, with a satiny gloss on the upper surface, and a tinge of red beneath. The flowers have a very gay and elegant appearance," and as there is one from the axil of each leaf, and as they all droop and hang below the branches, each consisting of a long tube shaded from dark rose colour to pale pink, and tipped with green, the petals being of a rich vermilion, they are not only very beautiful but very conspicuous. The species is a native of Peru, where it grows in damp shady places, and forms a shrub ten or twelve feet high. It was introduced in 1845.

19.—FUCHSIA MACRANTHA *Hook.* THE LONG-FLOWERED FUCHSIA.

Synonyme.—? F. apetala *Ruiz et Pav.*

Engravings.—Bot. Mag., t. 4233; Paxt. Mag. of Bot., vol. xiii., p. 97; and our *fig.* 1, in Pl. 27.

Specific Character.—Petals wanting. Leaves ovate, acute, entire. Peduncles axillary, solitary or aggregate, one-flowered. Flowers drooping. Tube of the calyx very long, attenuated at the base; segments broad, ovate, spreading, inclosing the stamens. Ovarium elongately turbinate, four-grooved. Style exserted. Stigma capitate.

Description, &c.—This species so closely answers the description of the *F. apetala* of Ruiz and Pavon, that it seems difficult to imagine it can be distinct. Sir William Hooker, however, says, that if the living plant of "*F. macrantha* be compared with Ruiz and Pavon's *F. apetala*, the differences will be very apparent." The present species appears in England to be a dwarf evergreen shrub with spreading branches, which has been known to flower when only six inches high, and which at the height of two feet has been so covered with flowers that it has been impossible to see either the leaves or the branches. In its native country, however, it is said to climb to the top of lofty trees. The colour of the flowers is a deep rose shaded into a greenish-white at each end. The species was introduced in 1846.

OTHER SPECIES BELONGING TO SECTION III.

F. DEPENDENS *Hook.*

This is a very handsome species, the long trailing stems of which are supported by the neighbouring trees in its native country. The branches grow in whorls, with the flowers drooping from them, the flowers themselves bearing considerable resemblance to those of *F. fulgens.* It is a native of Mexico, and was introduced in 1847.

F. DENTICULATA *Ruiz et Pav.*

This species, which has not yet been introduced, is said to be the most beautiful of all the Fuchsias. The flowers are said to be purple, and so magnificent that the plant even in Peru is called *Mollo-Ccantu,* or the *Beauty-plant.* It is a shrub from six to twelve feet high. *F. simplicicaulis* and *F. apetala* are two other species figured and described in the " Flora Peruviana " which are said to be well deserving of an introduction into this country ; if, indeed, *F. apetala* be not already here under the name of *F. macrantha.*

Section 4. Tube of the calyx strumose and ventricose at the base just above the ovarium. Ovules very minute, crowded on the central placenta without order. Leaves alternate.

20.—FUCHSIA EXCORTICATA *Lin.* THE NEW ZEALAND FUCHSIA.

Synonyme.—Skinnera excorticata *Forst.* Engraving.—Bot. Reg., t. 857.

Specific Character.—Leaves alternate, ovate-lanceolate, mealy beneath. Tube of the calyx strumose at the base.

Description, &c.—This very singular plant is so different from the generality of Fuchsias that when it was first introduced it was supposed to be a different genus, and was described as such by Mr. Forster in his " Prodromus." All the other kinds of Fuchsia have their leaves growing either in pairs opposite each other or in whorls of three or four springing from the same joint, but in this species the leaves are alternate. The flowers are also very distinct, as there is a large fleshy knot at the base of the tube of the calyx, and a ridge running down the centre of each segment. The petals are almost black, and when the flowers first expand the calyx is green, but it afterwards changes to a bright crimson. The species is a native of New Zealand, whence it was introduced in 1824, but it has never become popular.

CHAPTER XXVI.

LYTHRACEÆ *Lindl.*

Essential Character.—Calyx monosepalous, with a tubular or campanulate tube; lobes valvate or separate in æstivation, their sinuses sometimes lengthened into other lobes, which are produced on the outside. Petals variable in number, inserted between the lobes of the calyx, very deciduous, sometimes wanting altogether. Stamens inserted into the tube of the calyx below the petals, to which they are sometimes equal in number ; sometimes they are twice, thrice, or even four times as numerous, but they are very seldom fewer; anthers oval, two-celled, inserted by the back. Ovarium free, two or four-celled. Style filiform ; stigma usually capitate. Capsule membranous, covered by the calyx, one-celled, opening either longitudinally or in an irregular manner. Seeds numerous, small, exalbuminous, adhering to the central placenta. Embryo straight, with the radicle turned towards the hylum, and the cotyledons flat and foliaceous. (*G. Don.*)

Description, &c.—There are only two genera in this order which contain ornamental greenhouse plants, and these are *Cuphea* and *Lagerstrœmia*. The name of *Lythraceæ* is taken from *Lythrum*, the botanic name for the Purple Loosestrife, and it signifies black blood, in allusion to the peculiarly dark blackish-purple observable in the flowers of the Lythrum.

GENUS I.

CUPHEA *Jacq.* THE CUPHEA.

Lin. Syst. DODECANDRIA MONOGYNIA.

Generic Character.—Calyx tubular, gibbous at the base on the upper side; limb wide, twelve-toothed, with six of the teeth erect, the other six minute or nearly obsolete, rising from the sinuses of the inner teeth. Petals six or seven, unequal. Stamens eleven or fourteen, rarely six or seven, unequal, inserted in the throat of the calyx. Gland under the ovarium thick. Style filiform; stigma simple or rather bifid. Capsule membranous, covered by the calyx, one or two-celled, at length cleft by the deflexed placenta, as well as the calyx. Seeds nearly orbicular, compressed, wingless. (*G. Don.*)

Description, &c.—The species which compose this genus consist chiefly of half-hardy annuals and stove perennials or small shrubs. Some greenhouse species have, however, been recently introduced. The name of *Cuphea* signifies curved, in allusion to the curved form of the capsule. Like the Fuchsia, the most conspicuous part of the flower of these plants is the calyx, which is brightly coloured, the petals being very small and generally of a dark purple.

1.—CUPHEA MELVILLA *Lindl.* GENERAL MELVILLE'S CUPHEA.

Synonyme.—Melvilla speciosa *Anderson.*

Engravings.—Bot. Reg. t. 852; Paxt. Mag. of Bot., vol. viii., p. 197; and our *fig.* 3, in Pl. 28.

Specific Character.—Leaves lanceolate, scabrous, attenuated. Racemes terminal, simple, many-flowered. Calyx long, curved, two-coloured, hairy. Petals wanting.

Description, &c.—This very handsome species was originally supposed to be a stove plant, as it is a native of Guiana, whence it was introduced in 1823. As it was found very difficult to flower in the stove, it was very seldom seen, but lately it has been found to grow freely and flower abundantly when kept in a warm greenhouse, as it appears to be injured by being exposed to too much heat. It must, however, be kept under glass all the year.

2.—CUPHEA STRIGILLOSA *Lindl.* THE COARSE-HAIRED CUPHEA.

Synonyme.—C. pubiflora *Benth.*

Engravings.—Bot. Reg. for 1846, t. 14; ? Paxt. Mag. of Bot., vol. xi., p. 241, under the name of *C. strigulosa.*

Specific Character.—Stem, branches, and flowers pubescent. Leaves ovate or ovate-lanceolate, acute, rounded at the base. Peduncles sometimes two-flowered, and forming a kind of raceme at the apex. Calyx having an elongated and obtuse spur, viscously pubescent; mouth oblique, showing the two small petals. Stamens eleven, exserted, glabrous.

Description, &c.—This species Dr. Lindley states he received a dried specimen of, with a query asking if it were the *C. strigulosa* of Kunth. This species, however, he states, is quite distinct. There is, however, a plant figured in "Paxton's Magazine of Botany" under the name of *C. strigulosa*, which is certainly quite distinct from the one figured in the "Botanical Register," as there are no petals visible in the flowers, and the calyxes are much more highly coloured. *C. strigillosa* appears to have been introduced about 1844. It is a very pretty plant, shrubby, and producing a great profusion of flowers, which are remarkable for having only two petals, which are "stuck on one side only of the calyx, giving the gay orange and scarlet flowers a very singular appearance." In the plate given in "Paxton's Magazine" these petals are omitted, and the leaves are much larger than are shown in the plate in the "Botanical Register." The latter, however, is an exact representation of the species; as I compared it with the flowers on a plant growing in the open air in my little garden at Bayswater, which flowered profusely all the summer, and continued to do so till it was killed by frost in November.

3.—CUPHEA PLATYCENTRA *Benth.* THE BROAD-CENTRED CUPHEA.

Synonyme.—C. tubiflora *Hort.*

Engravings.—Paxt. Mag. of Bot., vol. xiii., p. 267; and our *fig.* 2, in Pl. 28.

Specific Character.—Leaves petiolate, ovate, acuminate, slightly scabrous, attenuated at the base. Calyx elongated, six-toothed; spur dilated. Petals wanting. Stamens glabrous.

Description, &c.—This very pretty little plant is a dwarf evergreen shrub, which will grow and flower profusely in the open ground during the summer months, but which requires a greenhouse during winter. When kept constantly in the greenhouse it remains in flower nearly all the year, particularly if the tips of the long shoots be cut occasionally so as to force it to form short side shoots, as it is on these chiefly that it flowers. The species is a native of Mexico, from which country its seeds were accidentally imported in the earth sent over with some Mexican Orchideæ in 1846, to J. Anderson, Esq., of The Holme, Regent's Park.

4.—CUPHEA CORDATA *Ruiz et Pav.* THE HEART-SHAPED CUPHEA.

Engravings.—Bot. Mag., t. 4208; and our *fig.* 1, in Pl. 28.

Specific Character.—Pubescent. Stem suffruticose. Leaves ovate or cordate-ovate, opposite, nearly sessile, quite entire. Raceme panicled, bracteate. Calyx coloured, elongated at the base into an obtuse spur; mouth oblique, six-toothed. Stamens eleven, in three series. Two of the petals superior, subrotund, very large; the other four extremely small.

Description, &c.—This very showy plant has such a different appearance, from the large size of its two principal petals, to that of the other greenhouse species of the genus, that it is difficult to recognise it as belonging to them. It is very showy, and flowers freely. It is a native of Peru, but it appears to require more heat than most of the other plants imported from that country, as it requires to be kept in a greenhouse all the year.

OTHER SPECIES OF CUPHEA.

CUPHEA MINIATA *Hort.*

A very showy species from the brilliant vermilion colour of the petals, which are rather large. The upper part of the calyx is of a rich purple, and the lower part of a yellowish-green. It is supposed to be a native of South America, but as it was sent to England from either France or Belgium, its native country is not known. It was introduced in 1847.

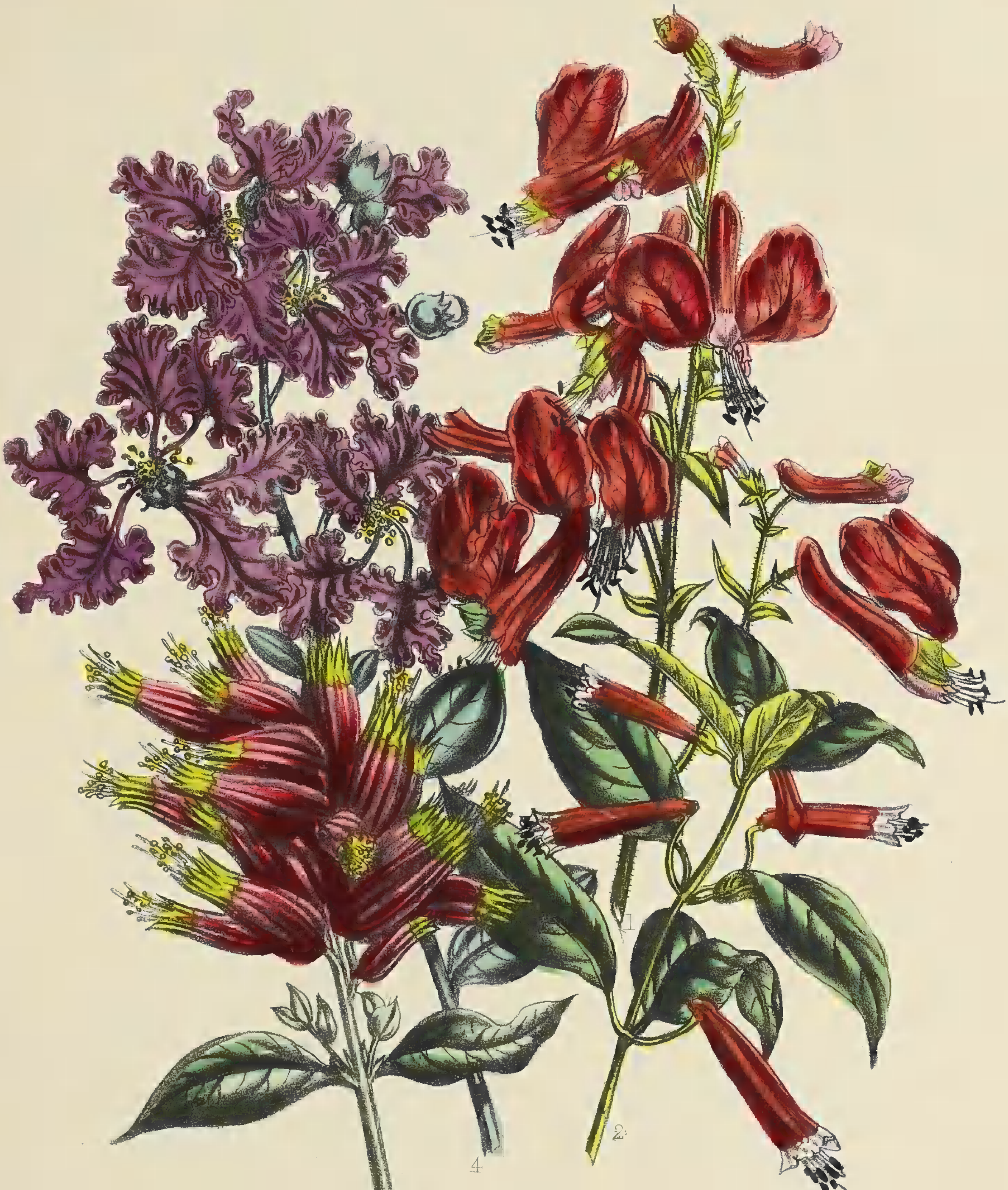
GENUS II.

LAGERSTRŒMIA *Lin.* THE LAGERSTRŒMIA.

Lin. Syst. ICOSANDRIA MONOGYNIA.

Generic Character.—Calyx bibracteolate at the base, six-cleft; lobes distinct, but none produced from the sinuses. Petals six, unguiculate, alternating with calycine lobes, and inserted at the top of the calycine tube between its lobes. Stamens from eighteen to thirty, inserted lower down in the calycine tube than the petals. Capsule three to six-valved, girded by the calyx, three to six-celled. Seeds expanded into membranous wings.

Description, &c.—Ornamental trees or shrubs with quadrangular branches and opposite leaves, and panicles or racemes of purple, red, or white showy flowers. Most of the species require a stove, but *L. indica* may be grown in a warm conservatory. The name was given to the genus in honour of Magnus Lagerstrœm of Gottenberg.



1 *Cuphea cordata* 2 *Cuphea platycentra*
3 *Cuphea Melvilla* 4 *Lagerstræmia indica*

1.—LAGERSTRŒMIA INDICA *Lin.* THE INDIAN LAGERSTRŒMIA.

Specific Character.—Leaves roundish-ovate, acute, glabrous. Panicle many-flowered, terminal. Petals curled, on long claws. (*G. Don.*)
Engravings.—Bot. Mag., t. 405; and our *fig.* 4, in Pl. 28.

Description, &c.—A very handsome plant, growing from six to ten feet high, and covered with showy flowers, which vary from a rosy pink to a very dark reddish-purple. The petals of the flowers are very curiously crisped or curled, and they have such long claws that they seem only loosely attached to the plant. The stem is so acutely quadrangular, that it might almost be called four-winged. The species may be grown either in a stove or a greenhouse, but it succeeds best planted in the free ground of a rather warm conservatory, where it will flower from August till October. It is a native of China and Japan, whence it was introduced in 1759. It is sometimes called the Pride of India, but this name is also applied to *Melia Azedarach* and some other plants.

CHAPTER XXVII.

MYRTACEÆ *R. Brown.*

Essential Character.—Calyx superior, four or five-cleft, rarely six-cleft, sometimes falling off like the cap, in consequence of the cohesion at the apex; tube adnate to the ovarium. Petals equal in number to the lobes of the calyx, inserted in the calyx, rarely wanting; but when present with a quincuncial æstivation. Stamens inserted along with the petals, either twice their number or indefinite, usually disposed in many series; filaments distinct, or connected into several parcels, curved inwards before flowering; anthers ovate, two-celled, small, bursting lengthwise. Ovarium inferior, two, four, five, or six-celled; style simple; stigma simple. Fruit either dry or fleshy, dehiscent or indehiscent. Seeds usually indefinite, variable in form. Embryo exalbuminous, straight or curved, with its cotyledons and radicle distinguishable, or conferruminated into a solid mass. (*G. Don.*)

Description, &c.—The plants included in this order are all remarkable for the long and very numerous stamens of their flowers, and their fragrant leaves, which are full of transparent dots, and feather-nerved, with the nerves or veins running into each other towards the margin, so as to form a transparent edge to the leaf. The order is divided into several distinct tribes. Some of the species require a greenhouse in this country, but others will not live here without a stove; and among the latter may be mentioned the Guava (*Psidium aromaticum*), the Clove (*Caryophyllus aromaticus*), the Rose Apple (*Jambosa vulgaris*), and the Allspice (*Eugenia Pimenta*).

TRIBE I. *Chamælaucieæ.*

Character of the Tribe.—Lobes of the calyx five. Petals five. Stamens disposed in one series, fertile and sterile mixed. Fruit dry, one-celled. Ovules numerous, erect from the base, fixed to the centre, or to the somewhat exserted central placenta.

Description, &c.—The plants included in this tribe are all little heath-like plants, with fragrant leaves and small flowers, natives of Australia, and requiring a greenhouse in Great Britain, where they should be grown in a mixture of loam, peat, and sand, and care should be taken to keep them regularly watered; but the soil in which they are grown should never be saturated with stagnant water, or they will be very likely to damp off.

GENUS I.

CALYTHRIX *Dec.* THE CALYTHRIX.

Lin. Syst. ICOSANDRIA MONOGYNIA.

Generic Character.—Calyx drawn out into a cylindrical tube; lobes ending in a long bristle each. Stamens from ten to thirty Fruit dry, indehiscent, one-celled. (*G. Don.*)

Description, &c.—A genus of heath-like shrubs, which in their native land, Australia, form large bushes with heads of "white, yellow, or purple flowers." Only three species are common in this country; but Dr. Lindley, in his Sketch of the Vegetation of the Swan River, describes several other kinds, two of which, namely *C. aurea*, with golden flowers, and *C. sapphirina*, the flowers of which are of a deep violet, appear to be very beautiful. Mr. Allan Cunningham, in his Synopsis of the genus, also describes several species which have not yet been introduced, and most of which he found growing in the hilly country near Bathurst. The genus was originally called *Calytrix* by Labillardière, but Decandolle changed the name to *Calythrix*, as the derivation was from the Greek words *kalyx*, a calyx, and *thrix*, a hair, in reference to the long hairs which terminate the lobes of the calyx; though, according to this explanation, it appears strange that the name was not changed to *Kalythrix*.

1.—CALYTHRIX VIRGATA *Hook.* THE TWIGGY CALYTHRIX.

Synonyme.—C. ericoides *Cunn.*
Engravings.—Bot. Mag., t. 3323; and our *fig.* 2, in Pl. 29.
Specific Character.—Leaves petiolate and stipulate, scattered; adult leaves and bracteas very smooth. Stipules deciduous. Bracteas one-half shorter than the tube of the calyx. Branches slender, twiggy, and very smooth.

Description, &c.—A heath-like shrub, the ends of the branches of which are densely covered with leaves lying closely upon each other, though the leaves of the other parts of the plant are spreading. The flowers are white, and rather ornamental from the dark colour of the anthers; and they are very peculiar from the great length to which the lobes of the calyx are drawn out.

OTHER SPECIES OF CALYTHRIX.

C. GLABRA *R. Brown.*

A pretty little plant, the flowers and leaves of which are tinged with pink. The leaves are cylindrical when fresh, but when dry they shrink into a triangular shape.

The other species of this genus are very seldom seen in gardens, and some of the kinds have not yet been introduced.

GENUS II.

VERTICORDIA *Dec.* THE FRINGE MYRTLE.

Lin. Syst. ICOSANDRIA MONOGYNIA.

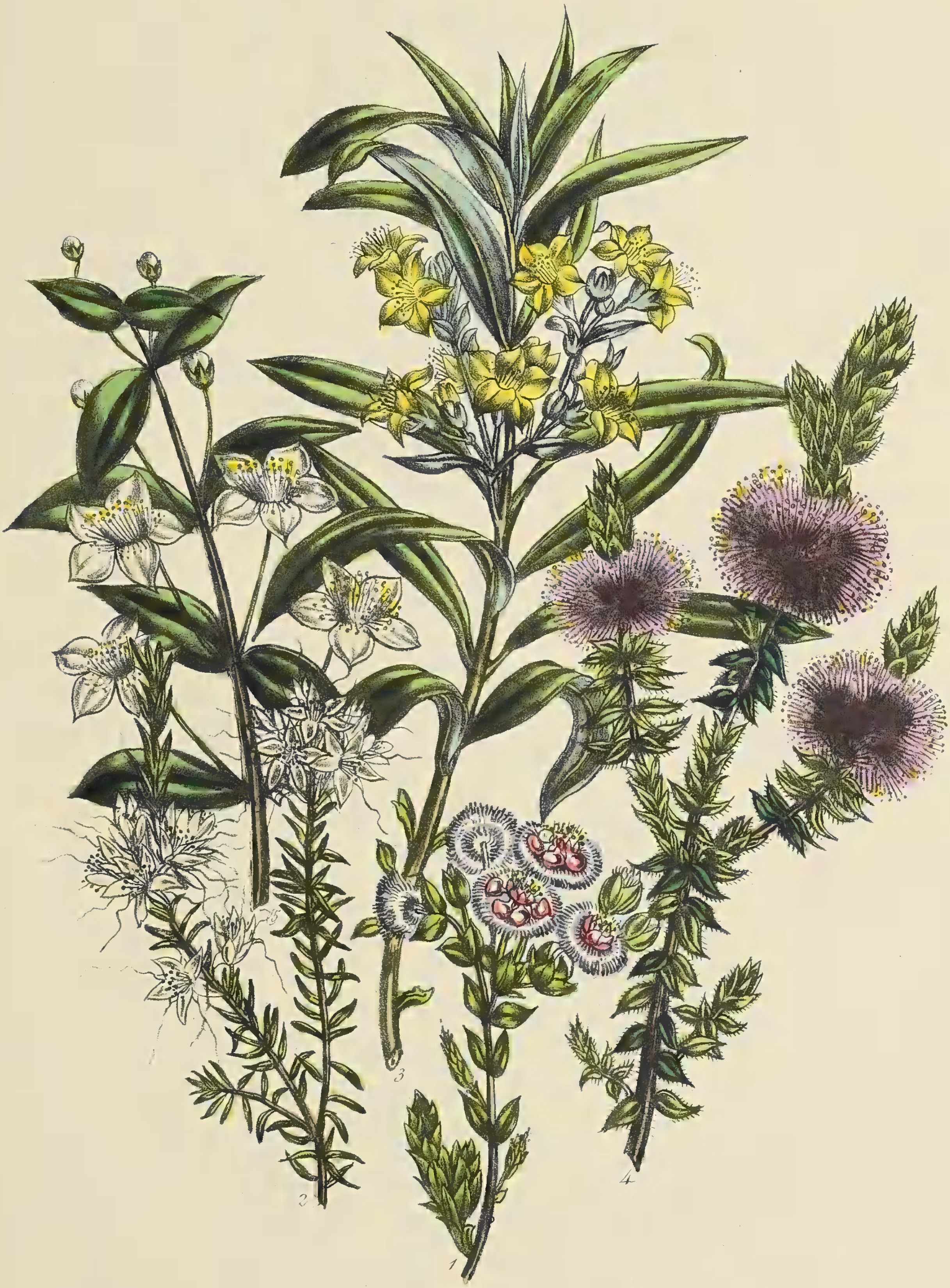
Generic Character.—Flowers before expansion girded by two free or concrete bracteas. Lobes of calyx palmately parted into five or seven lobes. Stamens twenty, of which ten are sterile and ligulate. Stigma feathered. Fruit one-seeded, one-celled when mature. (*G. Don.*)

Description, &c.—Small heath-like shrubs with dotted scentless leaves, and corymbs of very curiously formed flowers.

1.—VERTICORDIA DENSIFLORA *Lindl.* THE CLOSE-FLOWERED FRINGE MYRTLE.

Specific Character.—Leaves linear, triangular, obtuse. Corymbs of many-flowered heads. Bracteas deciduous, somewhat hooded at the apex. Tube of the calyx very hairy. Sepals unguiculate, many-parted. Petals subrotund, pubescent, fimbriated. Sterile filaments very short, tooth-shaped, entire. Style curved, exserted at the apex, bearded with forked hairs.

Description, &c.—This species is a native of the banks of the Swan River, whence it was introduced in 1843. It is a very pretty little heath-like shrub with pink flowers, which, Dr. Lindley observes, "are exquisitely beautiful when viewed through a magnifying-glass, but they are not bright enough in colour, nor sufficient in mass to produce a striking effect." The plant was first raised in England in Messrs. Veitch's nursery, at Exeter.



1 Verticordia insignis 2 Calythrix virgata 3. Melaleuca neriifolia
4 Melaleuca squamea 5 Myrtus communis.

OTHER SPECIES OF VERTICORDIA.

VERTICORDIA INSIGNIS *Endl.* Appendix to the Bot. Reg., t. 2. See our *fig.* 1, in Pl. 29.

One of the commonest and prettiest species in the genus, and a most abundant flowerer. The leaves are crowded together towards the end of the branches, but they are spreading on the old wood. The flowers are very pretty, and quite account for their English name of Fringe Myrtle by the delicate fringe with which the segments of the calyx are bordered.

GENUS III.

HYPOCALYMMA *Endl.* THE PEACH MYRTLE.

Lin. Syst. ICOSANDRIA MONOGYNIA.

Generic Character.—Flowers axillary, capitate. Tube of the calyx campanulate, connate with the ovarium; upper lip five-parted. Petals five, inserted in the mouth of the calyx, and alternating with the segments, slightly unguiculate, orbicular. Stamens from twenty to thirty, inserted with the petals, but much longer; filaments thread-shaped, subulate; anthers two-celled, opening longitudinally. Ovarium inferior, two-celled, each cell containing many ovules. Style filiform; stigma capitate or simple.

Description, &c.—This is a genus of Australian plants which, though belonging to the order Myrtaceæ, have pink flowers, and strongly resemble bushes of the dwarf Peach or Almond. The name of *Hypocalymma* signifies under a veil, in allusion to the bracts which veil the calyx from below.

1.—HYPOCALYMMA ROBUSTUM *Endl.* THE LARGER PEACH MYRTLE.

Engraving.—Bot. Reg. for 1843, t. 8.

Specific Character.—Leaves linear-lanceolate, mucronate. Flowers axillary, on very short pedicels. Heads generally many-flowered.

Description, &c.—"This," Dr. Lindley observes, "is one of those beautiful little Myrtaceous plants peculiar to the south-west of New Holland, which might be easily mistaken for small Almond or Peach bushes, so much are the flowers like them, and so seldom do we find bright rosy blossoms among the Myrtles." The species is a dwarf plant with clusters of small pink flowers, and linear leaves which smell like lemon. It is a native of the neighbourhood of the Swan River, whence it was introduced in 1842.

OTHER GENERA BELONGING TO TRIBE I.

DARWINIA *Rudge.*

A genus of Australian decumbent leafy shrubs, with red or white flowers disposed in terminal fascicles, and interspersed with chaffy leaves or bracteas. The genus is named in honour of the celebrated Dr. Darwin.

CHAMÆLAUCIUM *Dec.*

There is only one species in this genus, and it is a dwarf shrub with white flowers, a native of New Holland.

GENETYLLIS *Dec.*

There is only one species in this genus, a Diosma-like plant with white flowers.

PILEANTHUS *Labill.*

Another genus consisting of a single species, which is an Australian shrub with white flowers. The name of *Pileanthus* is derived from two Greek words, signifying a cap and a flower, in reference to the flower being inclosed within a one-leaved involucrum before expansion.

TRIBE II. *Leptospermeæ*

Character of the Tribe.—Calyx from four to six-lobed. Petals from four to six. Stamens free, or polyadelphous. Fruit dry, many-celled. Seeds exarillate and exalbuminous. (*G. Don.*)

Description, &c.—The plants contained in this tribe vary from small shrubs to large trees, but they are all natives of New Holland, and have all leaves with pellucid dots.

GENUS IV.

TRISTANIA *R. Brown.* THE TRISTANIA.

Lin. Syst. POLYADELPHIA POLYANDRIA.

Generic Character.—Calyx five-cleft. Bundles of stamens opposite the petals. Capsules three-celled, many-seeded. Flowers pedicellate. (*G. Don.*)

Description, &c.—This genus was formed from Melaleuca, and it contains several species, though most of them are very seldom seen in collections of plants in this country. The name of *Tristania* alludes to the flowers standing in threes. What is called the Turpentine Tree in New South Wales belongs to this genus.

1.—TRISTANIA NERIIFOLIA *R. Br.* THE OLEANDER-LEAVED TRISTANIA.

Synonymes.—Melaleuca neriifolia *Sims*; M. salicifolia *Andr.*

Engravings.—Bot. Mag., t. 1058; Bot. Rep., t. 485; and our *fig.* 3, in Pl. 29, under the name of *Melaleuca neriifolia.*

Specific Character.—Leaves opposite, lanceolate, glaucescent beneath. Bundles of stamens triandrous or pentandrous. (*G. Don.*)

Description, &c.—This plant, when discovered by the first settlers in New South Wales, was called by them the Tea tree, because the leaves tasted bitter and astringent, somewhat like those of the black tea. It was at first included by botanists in the genus *Melaleuca;* but it has since been very properly separated from that genus, as it differs not only in some points of botanical construction, but in general appearance, habit of growth, and medicinal properties. The species in its native country is a tree twenty or thirty feet high, but in Great Britain it forms only a moderate-sized shrub. It was introduced in 1804.

OTHER SPECIES OF TRISTANIA.

TRISTANIA MACROPHYLLA *Cunn.*

A large handsome plant, with laurel-like leaves, and white flowers. In Australia it forms a tree sixty feet high, losing the exterior of its bark in the same way as *Arbutus Andrachne.* It was introduced in 1825.

GENUS V.

BEAUFORTIA *R. Br.* THE BEAUFORTIA.

Lin. Syst. POLYADELPHIA POLYANDRIA.

Generic Character.—Tube of the calyx turbinate; limb five-parted; lobes acute. Petals five. Bundles of stamens five, opposite the petals. Anthers inserted by the base, bifid at the apex; lobes deciduous. Style filiform. Capsule corticate, incrusted to the tube of the calyx, three-celled; cells one-seeded. (*G. Don.*)

Description, &c.—This genus was named in honour of the Duchess of Beaufort, a great patroness of everything connected with floriculture and botany during a great part of the last century. Three or four species have been described, but only one, or, at most, two are in cultivation in this country.

1.—BEAUFORTIA DECUSSATA *R. Br.* THE CROSS-LEAVED BEAUFORTIA.

Engravings.—Bot. Mag., t. 1733; Bot. Reg., t. 18.

Specific Character.—Leaves opposite, decussate, ovate or oval, many-nerved. Bundles of stamens on very long claws; filaments radiating. Style usually flexuous.

Description, &c.—The flowers of this plant are very curious. They are produced in clusters or fascicles round the stem, and above them the stem divides into three leafy branches. The flowers consist almost entirely of stamens, the petals being green and so small as to be quite inconspicuous. The style is curiously curled up, and lies like a miniature snake in the centre of the flower. The stamens are disposed in bundles; and each consists of a very long claw or stem, branching at the extremity into four or five distinct filaments bearing anthers. The plant grows about four or five feet high, with a woody stem, which has only a few branches, and those placed near the upper part; the stem below them being striped by four rather broad longitudinal fillets of bark, which "scale off by determinate portions, parting at the base upwards, within the intervals of the scars left by the fallen foliage." Altogether, the plant has a very singular appearance; but it is ornamental, from the deep scarlet of the stamens, and dark-green of the leaves. It was introduced in 1800.

OTHER SPECIES OF BEAUFORTIA.

BEAUFORTIA DAMPIERI *Cunn.*

A dwarf shrub with tortuose branches, somewhat like those of *Araucaria imbricata*, and globose heads of pinkish flowers. A native of Western Australia, introduced in 1822.

GENUS VI.

CALOTHAMNUS *Labill.* THE CALOTHAMNUS.

Lin. Syst. POLYADELPHIA POLYANDRIA.

Generic Character.—Calyx four or five-toothed. Bundles of stamens opposite the petals. Capsule covered by the calyx, three-celled, many-seeded. Flowers sessile. (*G. Don.*)

Description, &c.—This genus is very nearly allied to the last, from which, indeed, it is distinguished only by some botanical differences invisible to any eyes but those of a botanist. The name is derived from two Greek words signifying beautiful shrub. There are five or six species, but only two of them are in general cultivation in Great Britain. Some of the species were called the White Tea Tree by the early colonists.

1.—CALOTHAMNUS QUADRIFIDA *R. Br.* THE FOUR-CLEFT CALOTHAMNUS.

Engraving.—Bot. Mag., t. 1506.

Specific Character.—Bundles of stamens four, distinct, equal, bearing from twelve to fifteen anthers each. Adult leaves, as well as flowers, glabrous.

Description, &c.—A curious and showy greenhouse shrub, bearing considerable resemblance to *Beaufortia decussata*, but differing from that species in having the stamens growing in a tuft on one side, instead of being disposed round the stem. The species is a native of the south-west coast of New Holland, whence it was introduced in 1803.

OTHER SPECIES OF CALOTHAMNUS.

C. VILLOSA *R. Br.*

This species is very inferior in beauty to the last, which it resembles in all respects except in the bundles of stamens being disposed all round the stem, instead of being only on one side. Like the other, it is a native of the south-west coast of New Holland, whence it was introduced in 1803.

GENUS VII.

MELALEUCA *Lin.* THE MELALEUCA.

Lin. Syst. POLYADELPHIA POLYANDRIA.

Generic Character.—Limb of the calyx five-parted. Bundles of stamens elongated, opposite the petals. Capsule covered by the calyx, and adnate to the base of the branches, three-celled, many-seeded. Flowers sessile. (*G. Don.*)

Description, &c.—This genus takes its appellation from the Cajuputi Tree, *M. Leucadendron*, an East Indian tree, which is a stove plant in Great Britain; and the botanical name of which signifies black and white, as the trunk of the tree is black, and the branches are white. This tree produces a strong-smelling green oil, called Cajeput, which is used in medicine for rheumatic patients, and others; and which is said to be very efficacious in cases of cholera. All the species of Melaleuca have a little of the aromatic smell of this oil, but none of the Australian species possess it in sufficient quantities to be useful. About forty species of Melaleuca have been described, but only a few of them are in cultivation in British greenhouses.

1.—MELALEUCA SQUAMEA *Labill.* THE SCALY-BRANCHED MELALEUCA.

Engravings.—Bot. Reg., t. 477; and our *fig.* 4, in Pl. 29.

Specific Character.—Leaves ovate-lanceolate, acuminate, three-nerved; young leaves and branches hairy. Flowers in globular heads, pubescent. Stamens in bundles of five, six, or nine each; staminiferous claw very short.

Description, &c.—This very pretty little shrub is a native of Van Diemen's Land, whence it was introduced in 1805. It grows erect, and the branches are produced in whorls round the stem. The leaves are spreading, and the young ones are very hairy, sometimes almost shaggy on the lower side. The flowers are lilac, and so clustered together as to hide the staminiferous stalks, which in this species are exceedingly short. The specific name alludes to "the peeling of the bark on the older branches of the plant, in short scale-like strips in the intervals of the foliage."

2.—MELALEUCA THYMIFOLIA *R. Br.* THE THYME-LEAVED MELALEUCA.

Synonymes.—M. gnidiæfolia *Vent.*; M. coronata *Andr.*; Metrosideros calycina *Cav.*

Engravings.—Bot. Mag., t. 1868; Bot. Rep., t. 278.

Specific Character.—Leaves opposite, lanceolate. Spikes few-flowered. Staminiferous stalk bearing many stamens; claws of the stamens branched on the inside to the middle.

Description, &c.—This very elegant little plant bears more resemblance to a *Grevillea* than to a Melaleuca, from the curious manner in which the staminiferous stalks are curled up. The flowers are of a purplish rose-colour, and very delicate and pretty, though not very abundant. The leaves are small and greyish, resembling those of the common Thyme, and when held up to the light they will be found to contain a great many small transparent spots, which are glands containing an aromatic essential oil. The species is a native of Australia, whence it was sent to England by Sir Joseph Banks in 1792.

OTHER SPECIES OF MELALEUCA.

M. DECUSSATA *R. Br.*

A pretty little shrub, nearly allied to the last, but with much smaller heads of flowers. It is a native of the south coast of New Holland, whence it was introduced in 1803. The flowers are lilac, and are produced in small heads, which appear to grow on peduncles, "but these are in reality branches with sessile flowers; which, after the flower decays, are elongated, and the part of the branch on which the flower grows is thickened, so that the capsules become half immersed in the wood." The flowers are produced in succession nearly all the summer.

M. FULGENS *R. Br.*

This very showy species is more nearly allied to *Beaufortia* and *Calothamnus* than any of the other kinds of Melaleuca, from the disposition and general appearance of the flowers. It "is a slender, hard-wooded, branching shrub," with a smooth bark, which is red in the young wood, but in the old becomes brown, "with a cuticle which peels off in long narrow strips." The species is a native of the south of New Holland, whence it was introduced in 1803. It is rather tender in England, and requires to be kept in the greenhouse all the year. It flowers earlier than the other species.

M. FRASERI *Ker.*

One of the prettiest species of the genus. It is a low much-branched shrub, bearing the leaves in tufts, at the extremity of the branches. The flowers are of a delicate rose-colour, and they are disposed in nearly oval or subglobular heads. The species is a native of New South Wales, whence it was received in 1832. It is sometimes called *M. genistifolia* in the nurseries, but it is quite distinct from that species.

M. SQUARROSA *R. Br.*

This species is sometimes called the Myrtle-leaved Melaleuca, because the leaves when rubbed, and the flowers when dried, have an agreeable aromatic smell, like the leaves of the Myrtle. The species is found in various parts of New South Wales and Van Diemen's Land, and the plants imported from the latter country are so nearly hardy that they may be grown in the open air, if they have a slight protection during severe frosts in winter. The species, which was introduced in 1794, has whitish flowers, the stamens of which are collected in five bundles, only slightly connected at the base.

M. INCANA *R. Br.*

A very pretty little plant with whitish flowers and greyish leaves, a native of New South Wales, whence it was introduced in 1794. It is sometimes called *M. canescens*, and sometimes *M. tomentosa*. There are several other species.

GENUS VIII.

EUDESMIA *Dec.* THE EUDESMIA.

Lin. Syst. POLYADELPHIA POLYANDRIA.

Generic Character.—Limb of the calyx four-toothed. Petals joined into a deciduous operculum. Bundles of stamens four, alternating with the teeth of the calyx. Capsule four-celled, four-valved. Flowers pedunculate. (*G. Don.*)

Description, &c.—Only one species is known of this genus (*E. tetragona*). It is a shrub, growing in its native country about ten feet high, with square branches, broad lanceolate leaves, and umbels of white flowers The leaves are leathery, and of that bluish-green which is so common among Australian trees. The name of *Eudesmia* is from two Greek words, signifying well-bundled, in allusion to the arrangement of the stamens.

GENUS IX.

EUCALYPTUS *L'Herit.* THE EUCALYPTUS.

Lin. Syst. ICOSANDRIA MONOGYNIA.

Generic Character.—Limb of the calyx lid-formed, falling off in one piece. Petals none. Stamens numerous. Capsule four-celled, or from abortion only three-celled, many-seeded. (*G. Don.*)

Description, &c.—The genus Eucalyptus takes its botanic name from two Greek words, signifying well covered with a lid, in reference to the limb of the calyx covering the flower before expansion, and afterwards falling off in one piece in the shape of a lid or cup-like cover. Some of the species of this genus form large trees, some attaining the height of two or three hundred feet in their native country (Australia), while others are mere shrubs. In Australia they are known by the general name of Gum Trees, being distinguished by their colour, such as the Red or the Blue Gum Trees, &c. One kind is called the Stringy Bark. About a hundred species are known in New Holland, and upwards of fifty have been introduced into this country. One of the most remarkable species is *E. macrocarpa*, the flowers of which are conspicuous from their bright crimson stamens and yellow anthers. This species was introduced in 1842.

GENUS X.

ANGOPHORA *Cav.* THE ANGOPHORA.

Lin. Syst. ICOSANDRIA MONOGYNIA.

Generic Character.—Limb of the calyx five-toothed. Stamens numerous. Capsule covered by the calyx, three-celled, three-valved; cells one or few-seeded. Flowers corymbose. (*G. Don.*)

Description, &c.—This is a small genus of Australian shrubs, which were formerly included in the genus *Metrosideros*. The name of *Angophora* is derived from two Greek words, signifying cup-bearing, in allusion to the form of the fruit.

1.—ANGOPHORA CORDIFOLIA *Cav.* THE HEART-LEAVED ANGOPHORA.

Synonymes.—Metrosideros hispida *Smith*; M. hirsuta *Andr.*; M. anomala *Vent.*; M. cordifolia *Pers.*; Eucalyptus hirsuta *Link.*

Engravings.—Bot. Mag., t. 1960; Bot. Rep., t. 281; and our *fig.* 2, in Pl. 30.

Specific Character.—Leaves sessile, ovate, cordate at the base, glabrous. Peduncles and branchlets clothed with bristles or stiff hairs.

Description, &c.—A very singular looking plant, remarkable for the stiff hairs, resembling prickles, which clothe the stem, and for the large and very showy flowers. It is a native of New Holland, near Port Jackson, and it was introduced in 1787.

There are three or four other species of *Angophora*, but they are seldom seen in England.

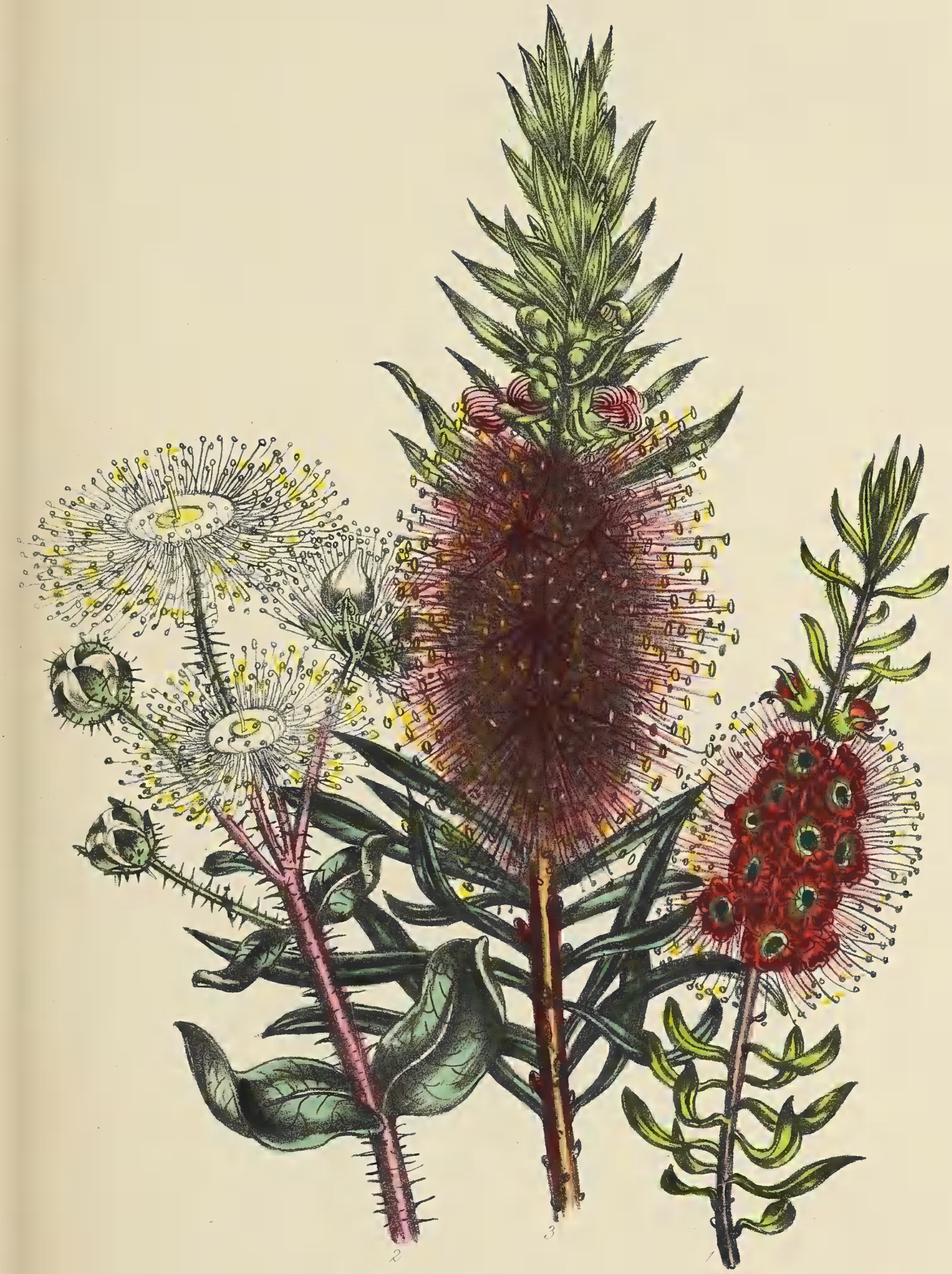
GENUS XI.

CALLISTEMON *R. Brown.* THE CALLISTEMON.

Lin. Syst. ICOSANDRIA MONOGYNIA.

Generic Character.—Limb of the calyx five-parted; lobes obtuse. Stamens numerous. Capsule three-celled, many-seeded, incrusted by the calyx. Flowers sessile. (*G. Don.*)

Description, &c.—This genus takes its name from two Greek words, signifying a beautiful stamen, from the great beauty of the stamens of most of the species. There are a great many species, some of which were called



1 Callistemon macrostachyum 2 Angophora cordifolia 3 Metrosideros speciosa.

Bottle-brush Trees by the first settlers in New South Wales, from the disposition of the stamens round the stem bearing some resemblance to that of the bristles on the brushes used in cleaning bottles.

1.—CALLISTEMON VIRIDIFLORUM *Dec.* THE GREEN-FLOWERED CALLISTEMON.

Synonyme.—Metrosideros viridiflora *Sims.*

Engraving.—Bot. Mag., t. 2602.

Specific Character.—Leaves linear-lanceolate, stiff, pungent, beset with scabrous dots, rather villous when young, as well as the branches. Calyx glabrous. (*G. Don.*)

Description, &c.—This species of Callistemon when in flower is so exceedingly like a bottle-brush, as completely to explain why the colonists gave the somewhat singular name to the genus. The plant is not particularly handsome, from the colour of the flowers being green, but it is frequently seen in collections from the singularity of its appearance. It was introduced about 1818.

2.—CALLISTEMON LOPHANTHUM *Sweet.* THE CREST-FLOWERED CALLISTEMON.

Synonymes.—Metrosideros lophantha *Vent.*; M. saligna *Sims.*

Engraving.—Bot. Mag., t. 1821.

Specific Character.—Leaves lanceolate, attenuated at both ends, mucronate, one-nerved, and feather-veined, glabrous in the adult state but villous when young, as well as the branches. Flowers distinct, spicate, nearly terminal. Calyx pilose. Petals rather pubescent, ciliated. Ovary densely clothed with down. Capsule distinct. (*G. Don.*)

Description, &c.—This species is a tall shrub with flexible branches and lanceolate leaves, which are narrowed at both ends so as to give them a very close resemblance to those of the willow. The flowers are yellowish, and do not terminate the branch as in *C. viridiflorum*, but have a branch appearing beyond. The species is a native of New South Wales, whence it was introduced in 1806; and when planted in the free ground of a conservatory it forms a bushy shrub from four to six feet high.

3.—CALLISTEMON SPECIOSUM *Dec.* THE SHOWY CALLISTEMON.

Synonyme.—Metrosideros speciosa *Sims.*

Engravings.—Bot. Mag., t. 1761; and our *fig.* 3, in Pl. 30, under the name of *Metrosideros speciosa.*

Specific Character.—Leaves lanceolate, mucronate, flat, having the middle nerve rather prominent, and the lateral ones approximating to the margin. Calyxes villous. Capsule four-celled, tomentose at the margin. (*G. Don.*)

Description, &c.—This is one of the most showy of all the species of Callistemon, from the brilliancy of the scarlet anthers and the abundance of their golden yellow pollen. The leaves when young are covered with long silky hairs, and have a reddish tinge. Like the others, this species is a native of New South Wales, whence it was introduced in 1823. When planted in the free ground of a conservatory it forms a handsome shrub ten feet high.

4.—CALLISTEMON MICROSTACHYUM *Lindl.* THE SMALL-SPIKED CALLISTEMON.

Engravings.—Bot. Reg. for 1838, t. 7; and our *fig.* 1, in Pl. 30.

Specific Character.—Leaves linear-spathulate, obtuse, very much spreading, whitely ciliated on the margin. Calyx pubescent. Stamens and petals crimson.

Description, &c.—This very showy species is remarkable for having the petals of the same brilliant colour as the stamens. It is also distinguished by its narrow, spreading, spathulate leaves, which have a margin of white hair. The flowers are smaller than those of most of the other species, but this is so far from being a blemish, that it gives a degree of elegance to the plant, in which most of the species of the genus are deficient. It should be observed that in making cuttings of this species, they should be taken from the points of the young shoots, and if possible from young plants. "This," it is observed in the "Botanical Register," "is of considerable importance, because it not unfrequently happens that the failure in striking cuttings is owing to having taken them off old plants. The best season for propagation is the spring: the young plants then become rooted before the following winter. They will strike root best in silver sand. The soil should be good peat, and if it is not naturally mixed with sand, a little of this must be added. The pots should be well drained in order to carry off superfluous water." The species is a native of New Holland, whence it was introduced in 1837.

OTHER SPECIES OF CALLISTEMON.

C. LANCEOLATUM *Dec.*

This species is sometimes called *Metrosideros lanceolata*, and sometimes *M. citrina*. It differs from the other species of the genus in the tufts of flowers being distinct and distant from each other, instead of being arranged in a mass round the stem. The leaves of this species are also remarkably harsh and rigid to the touch, but when bruised they have an agreeable fragrance. The plant is an evergreen shrub, growing to the height of from four to six feet, and it was introduced in 1798. The stamens are scarlet.

C. RIGIDUM *R. Br.*

This is the same as the *Metrosideros linearis* of Willd. It is a handsome species with crimson stamens and very rigid leaves. It was introduced in 1800.

There are several other species, but they are seldom found in collections.

GENUS XII.

METROSIDEROS *Gærtn.* THE METROSIDEROS.

Lin. Syst. ICOSANDRIA MONOGYNIA.

Generic Character.—Limb of the calyx five or six-cleft. Stamens twenty or thirty, very long. Capsule two or three-celled; cells many-seeded. Flowers pedicellate. (*G. Don.*)

Description, &c.—This was originally a very large genus, but the species contained in *Angophora* and *Callistemon* having been separated from it, it is now confined to only a few species. *M. vera*, or the Ironwood Tree, is a native of the East Indies, and requires a stove in Great Britain The name of *Metrosideros* signifies ironwood.

GENUS XIII.

LEPTOSPERMUM *Forst.* THE LEPTOSPERMUM.

Lin. Syst. ICOSANDRIA MONOGYNIA.

Generic Character.—Limb of the calyx five-cleft; lobes triangular. Stamens twenty or thirty, shorter than the petals. Capsule four or five-celled. Flowers solitary, pedicellate. (*G. Don.*)

Description, &c.—The name of *Leptospermum* is derived from two Greek words, signifying a slender seed. There are a great many species, most of which are natives of New Holland; but as they are not very ornamental, only one or two of them are in cultivation in British greenhouses.

1.—LEPTOSPERMUM SCOPARIUM *Smith.* THE NEW ZEALAND TEA TREE.

Synonymes.—Philadelphus scoparius *Ait.*; Melaleuca scoparia *Wendl.*

Engraving.—Bot. Rep., t. 622.

Specific Character.—Leaves ovate, mucronate, obsoletely three-nerved. Calyxes glabrous; calycine teeth membranous, coloured. (*G. Don.*)

Description, &c.—A pretty little plant with white flowers, the leaves of which were used as tea by the crew of Capt. Cook's ships when they first visited New Zealand. The tea made from this plant has an agreeable aromatic flavour when the leaves are used fresh; but it is very bitter when made from leaves that have become dry. This tea when made very strong was found to occasion sickness in some constitutions. The leaves are still used occasionally in making spruce beer, as they are said greatly to improve the flavour of the spruce. A variety of this, *L. s. grandiflorum,* introduced in 1817, is a very showy plant.

2.—LEPTOSPERMUM GRANDIFOLIUM *Smith.* THE LARGE-LEAVED SOUTH-SEA MYRTLE.

Engravings.—Bot. Mag., t. 1810; Lodd. Bot. Cab., t. 701.

Specific Character.—Leaves lanceolate, narrow, mucronate. Calyx villous; teeth coloured. Bracts of the bud persistent.

Description, &c.—This is a very ornamental little plant with large white flowers, which are curiously relieved by the pale brown of the bracts, or scales, which inclose the bud, and which remain after the expansion of the flower. Before the flowers open it is very difficult to tell the difference between the flower and leaf buds, as they are both inclosed within the same kind of scales. "These scales are permanent, and may be considered as bracts, forming an involucre at the base of the flower. In consequence of this arrangement, although the flower is really terminal, the fruit, by the elongation of the branch, must afterwards necessarily become lateral." The species is a native of Australia and the South-Sea Islands, and it was introduced in 1803. It is a hardy greenhouse shrub, and grows freely from cuttings.

3.—LEPTOSPERMUM FLAVESCENS *Smith.* THE YELLOWISH LEPTOSPERMUM.

Synonymes.—L. Thea *Willd.*; L. polygalæfolium *Salisb.*; Melaleuca Thea *Schrad.*

Engraving.—Bot. Mag., t. 2695.

Specific Character.—Glabrous. Leaves linear-lanceolate, submucronate, obscurely three-nerved. Flowers solitary, growing out of the apex of the branch. Calyx very glabrous; teeth roundish, coloured. Bracts deciduous.

Description, &c.—A moderate-sized shrub, with many twiggy angular branches clothed with reddish-brown bark. The leaves are rather small, but very numerous, and they are delicately tipped with pink. The flowers are very numerous, and they are white tinged with yellow, the teeth of the calyx being very conspicuous.

GENUS XIV.

BILLOTIA *R. Br.* THE BILLOTIA.

Lin. Syst. ICOSANDRIA MONOGYNIA.

Generic Character.—Limb of the calyx five-cleft; lobes triangular. Stamens from twenty to thirty, shorter than the petals. Berry three-celled. Flowers sessile, in globose heads. (*G. Don.*)

Description, &c.—This is a very small genus of Australian plants with white flowers crowded into globose heads. The name was given to the genus in honour of Madame Billoti of Turin, a celebrated botanical artist.

GENUS XV.

FABRICIA *Gærtn.* THE FABRICIA.

Lin. Syst. ICOSANDRIA MONOGYNIA.

Generic Character.—Limb of the calyx five-cleft; lobes valvate. Stamens numerous. Capsule many-celled, adnate to the calyx; cells opening at the apex; seeds winged. Flowers on short pedicels. (*G. Don.*)

Description, &c.—This is a very small genus, nearly allied to *Leptospermum*, but differing botanically in the capsule. The name of *Fabricia* was given to the genus in honour of Fabricius, the Danish Entomologist.

1.—FABRICIA LÆVIGATA *Gærtn.* THE SMOOTH FABRICIA.

Engraving.—Bot. Mag., t. 1304.

Specific Character.—Leaves obovate, alternate, glaucous. Teeth of the calyx triangular.

Description, &c.—This plant was introduced in 1788, but it is said to have been twenty years in England before it showed any symptoms of flowering. A great confusion has arisen between this plant and a species called *F. myrtifolia;* the only difference between the two being that the leaves of *F. myrtifolia* are said to be silky, and those of the present species to be smooth. It has been found, however, that the leaves of this species are silky when the plant is young, though they are perfectly smooth on old plants. The other species that are mentioned in books appear to have been lost, as *F. lævigata* is the only Fabricia known in British greenhouses.

GENUS XVI.

BÆCKIA *Lin.* THE BÆCKIA.

Lin. Syst. DECANDRIA MONOGYNIA.

Generic Character.—Limb of the calyx four-cleft. Stamens five or ten, shorter than the petals. Capsule from two to five-celled, many-seeded, inclosed in the calyx. Flowers pedicellate. (*G. Don.*)

Description, &c.—The plants contained in this genus can scarcely be distinguished from those of *Leptospermum* and *Fabricia*, except by the smallness of their flowers. The genus was named in honour of Bæck, a Swedish physician, an intimate friend of Linnæus. There are several species, some natives of New Holland, others of New Caledonia, and one of China; but only one kind is common in British greenhouses.

1.—BÆCKIA VIRGATA *Andr.* THE TWIGGY BÆCKIA.

Synonymes.—Leptospermum virgatum *Forst*; Melaleuca virgata *Smith.*

Engravings.—Bot. Mag., t. 2127; Bot. Rep., t. 598; and Lodd. Bot. Cab., t. 341.

Specific Character.—Leaves linear-lanceolate, pellucidly punctated. Peduncles axillary, umbelliferous.

Description, &c.—A very pretty little plant with white flowers, closely resembling those of the *Leptospermum*, but much smaller. It is a native of Australia, whence it was introduced in 1806.

TRIBE III.—MYRTEÆ.

Character of the Tribe.—Calyx four or five-parted. Petals four or five. Stamens free. Fruit fleshy, baccate, many-celled. (*G. Don.*)

Description, &c.—The plants belonging to this tribe are trees and shrubs, mostly natives of the Tropics, and which, consequently, require a hothouse in this country. Only two or three of the genera contain greenhouse plants.

GENUS XVII.

MYRTUS *Lin.* THE MYRTLE.

Lin. Syst. ICOSANDRIA MONOGYNIA.

Generic Character.—Limb of the calyx five-parted, rarely four-parted. Stamens numerous. Berry two or three-celled, crowned by the limb of the calyx. Seeds incurved, many in each cell, rarely solitary. Pedicels one-flowered. Leaves dotted. (*G. Don.*)

Description, &c.—Several of the species of this genus are stove plants, but the common Myrtle and two or three others are greenhouse plants. The name of the genus is from a Greek word signifying perfume, in allusion to the delightful fragrance emitted from the leaves of some of the species.

1.—MYRTUS COMMUNIS *Lin.* THE COMMON MYRTLE.

Engraving.—Our *fig.* 5, in Pl. 29.

Specific Character.—Pedicels solitary, one-flowered, about the length of the leaves, bearing two linear bracteoles under the flowers. Calyx five-cleft. Leaves ovate or lanceolate. Berry roundish, two or three-celled. Seeds reniform. Embryo arched, with a long radicle and small equal cotyledons. (*G. Don.*)

Description, &c.—There are few persons who are not well acquainted with the Common Myrtle, but very few of these are aware of the great number of varieties that are known of this popular plant. Most of the kinds that are common in this country have black fruit, but there is a variety, a native of Greece and the Balearic Isles, the fruit of which is white, the berry being large and eatable, and having an agreeable taste and smell. The varieties of the dark-fruited kind are, the common broad-leaved or Roman Myrtle, which is sometimes called the Flowering Myrtle because it flowers more freely than any of the other kinds; the Box-leaved Myrtle, which is very common in this country, but which very seldom flowers in Great Britain; and the broad-leaved Dutch Myrtle, which is commonly called the double-flowered. The Rosemary-leaved Myrtle is another kind frequently found in British greenhouses, where it is cultivated more for the sake of its leaves than its flowers. There are several other kinds, besides some fanciful varieties, such as the broad-leaved Jews' Myrtle, the leaves of which are said to be produced always in threes; the gold and silver-leaved; and the spotted-leaved. The Common Myrtle is a native of the South of Europe, whence it was introduced in 1597.

* * *

OTHER SPECIES OF MYRTLE.

M. UGNI *Molin.*

This species is a native of Chili, where it is called *Ugni* by the natives, and *Murtilla* by the Spaniards. The fruit is red, and has a musky flavour. The natives of Chili press the juice from it, and mix it with water, to which it gives a beautiful red colour. It forms a refreshing drink, which has somewhat of the smell of Rosemary.

M. TOMENTOSA *Ait.*

This is a very beautiful plant. The flowers are of a delicate rose colour, and the underside of the leaves and the whole of the buds are completely covered with a white cottony down. The plant is extremely different in its habit of growth from the common Myrtle, growing to the height of several feet. It is a native of China, whence it was introduced in 1766.

CHAPTER XXVIII.

PASSIFLORACEÆ *Juss.*

Essential Character.—Calyx of five or ten sepals, combined into a short or elongated tube, free at the apex, disposed in one or two series; outer lobes large, foliaceous; inner ones alternating with the outer ones, and more petal-like than them, sometimes these last are wanting altogether; the sides or throat are lined by filaments or annular or membranous coloured processes, which are disposed in one or more series, having the bottom usually closed by a lid-formed appendage. Petals five in some of the genera, but wanting altogether in others. Stamens five. Filaments opposite the exterior lobes of the calyx, joined into a long tube which sheaths the stipe of the ovarium; anthers fixed by the back, peltate, reflexed, turned outwards, two-celled, bursting lengthwise. Torus elongated into a long cylindrical stipe. Ovarium seated on the stipe, ovate, free. Styles three, rising from the same point, crowned by a stigma each, which is somewhat two-lobed. Fruit naked, or surrounded by the calyx, stalked, one-celled, three-valved, having a polyspermous parietal placenta in the middle of each valve; the valves sometimes dry and dehiscing, sometimes fleshy and indehiscent. Seeds attached in several rows to the placentas, usually clothed with a large pulpy aril, compressed, and generally scrobiculate. Embryo straight, in the centre of the fleshy thin albumen, having a terete radicle, which is turned towards the hylum; cotyledons flat and foliaceous. (*G. Don.*)

Description, &c.—The plants belonging to this order are generally very ornamental, but most of them require a stove in this country, and only a few of the species belonging to the genus *Passiflora*, and those included in *Tacsonia*, are greenhouse plants.

GENUS I

PASSIFLORA *Juss.* THE PASSION FLOWER.

Lin. Syst. MONADELPHIA PENTANDRIA.

Generic Character.—Tube of the calyx very short, having the throat ornamented with a filamentous crown. Berry usually pulpy, rarely membranous. (*G. Don.*)

Description, &c.—The plants belonging to this genus have all climbing stems and very ornamental flowers, which are very curiously formed. When the plant was originally observed by the Spaniards in Peru, the priests fancied that they discovered in the form of the flower a mysterious representation of the Passion of our Saviour. The leaf they expounded to be the spear which pierced his side; the twined threads of red and white which form the crown of the flower were supposed the symbol of the lashes of the whip tinged with blood; the five encircling stamens the crown of thorns; the pistil the column to which our Lord was bound during the flagellation; and the three divisions of the stigma the three nails used in the crucifixion. From this supposed emblematical interpretation, the plant received the name of the Passion Flower, and "figures of it were manufactured for devotional purposes, made up of crude representations of the instruments themselves instead of their presumptive symbols." The fruit of some of the species is eaten, and it is called Granadilla from a supposed resemblance to the fruit of the Pomegranate. Most of the species require a stove in this country, but some few are greenhouse plants.

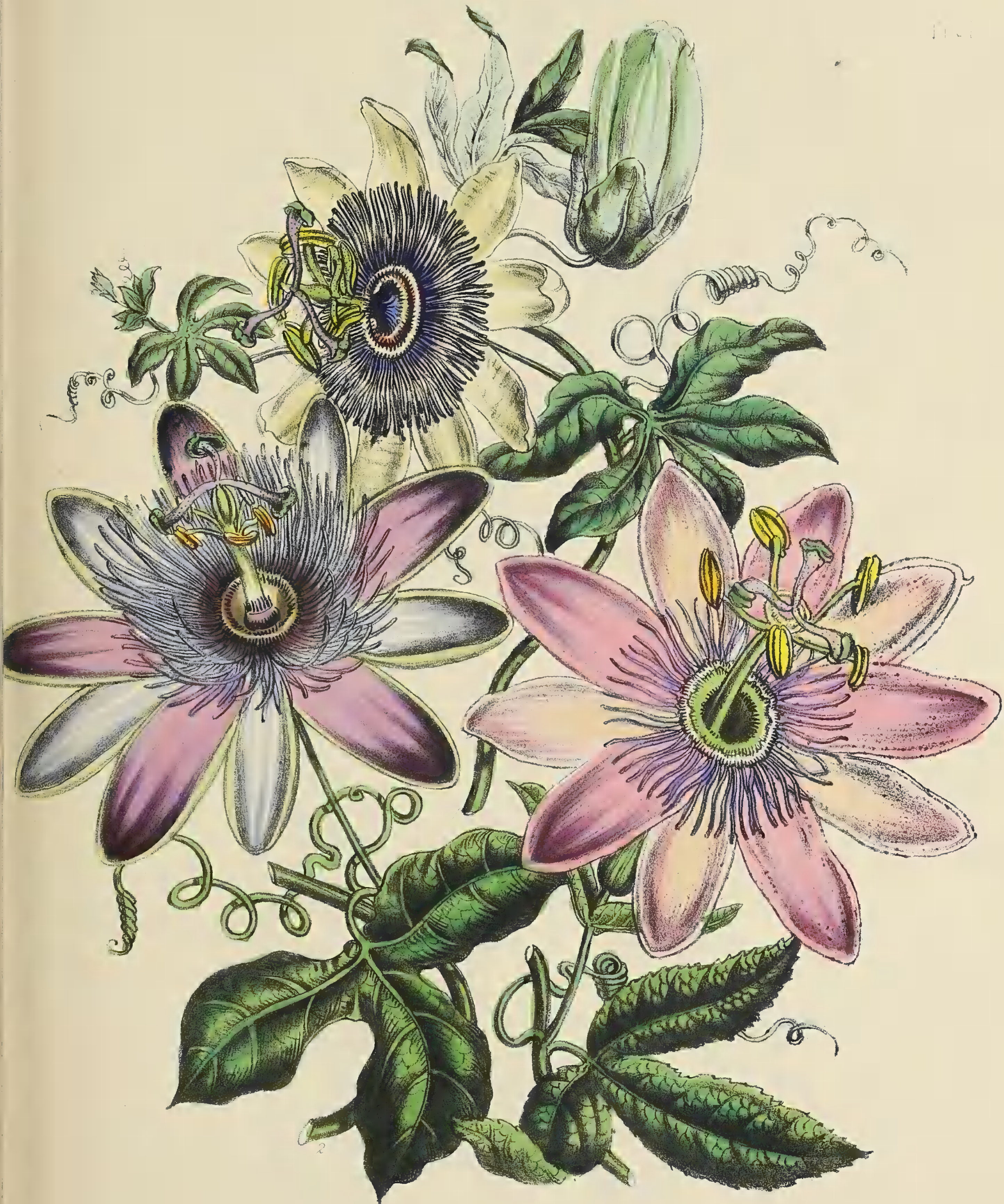
1.—PASSIFLORA CÆRULEA *Lin.* THE COMMON PASSION FLOWER.

Synonymes.—Granadilla pentaphyllos *Du Hamel*; Clematis quinquefolia *Rob.*

Engravings.—Bot. Mag., t. 28; Bot. Reg., t. 488; and our *fig.* 1, in Pl. 31.

Specific Character.—Leaves palmate, five-parted; segments entire. Petioles glandulous. Involucre three-leaved; leaves entire. Crown of threads shorter than the corolla.

Description, &c.—This species is very nearly hardy. It is a native of Brazil and Peru, whence it was introduced about 1699. The common Passion Flower is a climbing shrub, extending itself when it has proper support to the height of twenty feet or more. The branches when old are cylindrical, but when young they are sometimes slightly cornered in the upper part. The fruit is ovate, of an orange-yellow when ripe, and about the size of a large



1. Passiflora cærulea 2. Passiflora alato-cærulea 3. Tacsonia pinnatistipula.

plum or a small apricot The plant flowers best when planted in the free ground of a conservatory, but it will grow in the open air if it is sheltered from severe frost. It should be grown in a light rich soil, and it may be propagated by cuttings. When the plant has done flowering, the shoots should be well cut in, as it is found that the shoots in spring break better from the old wood than from that of the previous year. The flowers are always produced on the shoots of the current year; they have a faint scent, and only last one day. During the winter the plant should be kept in perfect rest.

2.—PASSIFLORA ALATO-CÆRULEA *Lindl.* MASTERS'S HYBRID PASSION FLOWER.

Engravings.—Bot. Reg., t. 848; and our *fig.* 2, in Pl. 31.

Specific Character.—Leaves glabrous, cordate, three-lobed; lobes quite entire, ovate-lanceolate. Petioles bearing from two to four glands. Stipules auriculated, acuminately apiculated, entire. Pedicels terete, much longer than the petioles. Branches quadrangular.

Description, &c.—This is a very showy plant, which was raised in 1823 from seeds of *P. alata*, a native of the West Indies, fertilised by the pollen of *P. cærulea*, at the nursery of Mr. William Masters, St. Peter's Street, Canterbury. "The stem of this hybrid," says Dr. Lindley, in the *Botanical Register*, "bears an evident resemblance to that of *P. alata*, being square; the membrane of the angles is, however, nearly obsolete, except in vigorous young shoots. Its leaves are of much the same texture and colour as those of *P. alata*, but are three-lobed, and very different from those of any other hardy creeper. The flowers are sweet-scented and extremely beautiful, the ray being of a rich purple, the petals pink, and the sepals of a delicate white." The plant is very nearly hardy, and may be grown in the open air in a sheltered situation with only a very slight protection during frosty weather.

OTHER SPECIES OF PASSIFLORA.

P. CÆRULEA RACEMOSA *Sab.*

This is another hybrid which, like the last, is very nearly hardy. It was raised from the seed of *P. racemosa*, fertilised by the pollen of *P. cærulea* in the year 1820. It is ornamental, but not quite so much so as *P. alato-cærulea*. There are several other hybrids which have been raised from either the seed or pollen of *P. cærulea*, all of which are more or less ornamental

P. INCARNATA *Lin.*

This species, the popular names of which are the common Granadilla and May Apple, was the earliest known in this country, having been introduced before 1629. It is a native of Virginia in North America, but it will not live in this country without the protection of a greenhouse. The flowers are sweet-scented, but not very ornamental. The fruit, which is about the size of an apple and of a deep orange when ripe, contains a sweet juicy pulp, which is thought very agreeable to eat. There is a variety of this species, the flowers of which are rather ornamental.

P. LUTEA *Lin.*

This is another North American species. It has herbaceous stems, and the flowers are of a pale yellow, but they are very small and not at all ornamental.

P. MIDDLETONIANA *Hort.*

This is a very singular plant, with strong stems, handsome dark-green shining foliage, and fragrant flowers, which are of a pale green, with numerous little pink dots on the inside. It is a native of South America, whence it was introduced in 1838.

There are many other species of Passion Flower, but they all require a stove in Great Britain.

GENUS II.

DISEMMA *Labill.* THE DISEMMA.

Lin. Syst. MONADELPHIA PENTANDRIA.

Generic Character.—Tube of the calyx short, furrowed below; crown of the throat double, the outer row composed of distinct filamentous threads, the inner one tubular with an entire or toothed border.

Description, &c.—The species contained in this genus were formerly included in Passiflora, but they have been separated on account of the formation of the crown, which, instead of being composed of long slender threads as in Passiflora, consists of two rows of very short threads, the outer one of which has the threads erect, while in the inner one they are pressed closely down round the pistil, which is remarkably long and erect. *Disemma* is derived from two Greek words signifying double-crowned, in allusion to the filaments in the centre of the flower.

1.—DISEMMA ADIANTIFOLIA *Dec.* THE NORFOLK ISLAND PASSION FLOWER.

Synonymes.—Passiflora adiantifolia *Ker*; P. glabra *Wend.*; P. adiantum *Willd.*; P. aurantia *Andr.*; Murucuja adiantifolia *Sweet.*

Engravings.—Bot. Reg., t. 233; Bot. Rep., t. 295.

Specific Character.—Leaves glabrous, glandular beneath, truncate at the base, three or five-lobed; lobes obtuse, somewhat three-cleft. Petioles glandless, a little longer than the pedicels. Petals shorter than the calyx.

Description, &c.—A very ornamental plant, climbing to a considerable height, and having somewhat angular and twisted branches. The leaves bear considerable resemblance in shape to those of the Maiden Hair Fern, but they are of a much brighter green, and are delicately veined. The stipules are very small and awl-shaped; but the tendrils are long and spiral. The peduncles of the flowers are jointed a little above the middle. The flowers before they expand look reddish, but when they open they are of a very pale buff, which afterwards changes to a brick red; they have no scent, but are very ornamental, particularly in their later stage. The species is a native of Norfolk Island, where it is found climbing up some of the tallest trees, and hanging in festoons from their branches, and whence it was introduced in 1792.

2.—DISEMMA HERBERTIANA *Dec.* LORD CAERNARVON'S DISEMMA.

Synonymes.—Passiflora Herbertiana *Ker*; Murucuja Herbertiana *Sweet.*

Engraving.—Bot. Reg., t. 737.

Specific Character.—Leaves pubescent, cordate at the base, broadly three-lobed; lobes ovate, acute. Petioles biglandular at the apex. Pedicels twin, one-flowered. Bracteas bristle-formed, very remote from the flower. Threads of the outer crown three or four times shorter than the inner calycine lobes or petals. (*G. Don.*)

Description, &c.—The flowers of this species are of a greenish white, but the crown is of a golden yellow. The plant is a native of the interior of New Holland, whence it was introduced in 1821 by Lord Caernarvon, in honour of whose family name it is called *Herbertiana.*

3.—DISEMMA AURANTIA *Labill.* THE NEW CALEDONIA DISEMMA.

Synonymes.—Murucuja aurantia *Pers.*; Passiflora aurantia *Forst.*

Engraving.—Bot. Mag., t. 4140.

Specific Character.—Leaves glabrous, ovate at the base, broadly three-lobed; lobes obtuse, middle lobe the longest; lateral ones furnished with a kind of appendage each on the outside. Bracteas bristle-formed, glandular at the apex, rather remote from the flower. Petioles biglandular at the apex. Threads of outer crown about equal in length to the inner lobes of the calyx or petals. (*G. Don.*)

Description, &c.—A very ornamental plant, a native of New Caledonia, whence it was introduced in 1844. The flowers are white in the bud, and on first expanding, but they gradually assume a yellow or orange tinge, and finally become of a brick red. The sepals have a very broad keel or deep wing at the back. The general appearance of the plant closely resembles that of the common Passion Flower, from which when out of blossom it can scarcely be distinguished. The flowers are produced in great abundance, and they are very ornamental, particularly in their latter state.

There are two other species, both natives of Australia, one of which has oval blood-red fruit, and the other scarlet flowers.

GENUS III.

TACSONIA *Juss.* THE TACSONIA.

Lin. Syst. MONADELPHIA PENTANDRIA.

Generic Character.—Tube of the calyx very long, with a ten-cleft limb, the five inner lobes probably petals; throat furnished with a scaly membrane. (*G. Don.*)

Description, &c.—A genus of very ornamental climbing plants, with the habit of the Passion Flowers, but easily distinguished from them by the immense length of the tube of the calyx. The name of *Tacsonia* is derived from that applied to one of the species in Peru. There are numerous species in the genus, but only two have as yet been introduced.

1.—TACSONIA PINNATISTIPULA *Juss.* THE FEATHER-STIPULED TACSONIA.

Synonymes.—Passiflora pinnatistipula *Cav.*; P. pennipes *Smith.*

Engravings.—Bot. Mag., t. 4062; Bot. Reg., t. 1536; Sweet's Brit. Flow. Gard., 2nd. series, t. 156; The Botanist, t. 171; and our *fig.* 3, in Pl. 31.

Specific Character.—Leaves white from a velvet-like down on the under surface, trifid beyond the middle; lobes serrated. Stipules pinnatifid and sometimes parted into slender lobes.

Description, &c.—A very ornamental plant, which was first raised in Great Britain in the garden of Mrs. Marryat, of Wimbledon, by whom its seeds were procured from Chili. Some of the plants produced by these seeds were placed "in the open air, and the remainder in a conservatory. The former perished; but the latter have grown luxuriantly, covering the rafters with their long climbing shoots, and flowering in abundance in the spring and summer months. The blossoms are very large and pendent, of a clear bright pale flesh-colour, beautifully contrasted with a single row of bright blue thread-shaped rays. They are succeeded by yellow, round, downy fruit, about the size of a hen's egg." The Tacsonia strikes freely from cuttings, and it is also easily raised from seeds. It was introduced in 1828.

2.—TACSONIA MOLLISSIMA *H. B. et K.* THE DOWNY-LEAVED TACSONIA.

Synonyme.—Murucuja mollissima *Spreng.*

Engravings. Bot. Mag., t. 4187; Bot. Reg. for 1846, t. 11; and Paxt. Mag. of Bot., vol. xiii., p. 25.

Specific Character.—Leaves three-parted, pubescently tomentose on the underside; segments cordate at the base, ovate-lanceolate, serrated. Petioles with many glands. Stipules semi-ovate, cuspidately acuminate, dentate. Peduncle one-flowered. Flowers very smooth. Segments of the calyx of the same colour as the petals; a glandular nectary at the mouth of the tube.

Description, &c.—This species, though not so ornamental as *T. pinnatistipula*, has a similar habit of growth, and like it thrives best in a conservatory. Though a native of the tropics of New Grenada, yet, as it grows at a height of from nine to eleven thousand feet above the level of the sea, it is evident that a temperate climate suits it best. In fact, it is found that when the plant is grown in a stove, the blossoms drop off without expanding. "The most singular part of the structure of this plant," says Dr. Lindley, "is the row of green glands or warts which stud the purple petiole, and which furnish the best means of recognising the species." There are twelve of these on each petiole. Dr. Lindley further observes that there are several different plants in the country, each bearing the name of *Tacsonia mollissima*, but which evidently do not belong to that species, as some of them have only two or three glands on the petioles. It is possible that this may be the reason that opinions differ so much as to the beauty of the flowers of *T. mollissima*, as those plants which produce the most beautiful flowers, may probably belong to some other species.

CHAPTER XXIX.

CRASSULACEÆ *Dec.*

Essential Character.—Sepals from three to twenty, more or less united at the base, and therefore the calyx is many-parted. Petals equal in number with the sepals, and alternating with them, either distinct or united into a gamopetalous corolla, inserted in the bottom of the calyx. Stamens inserted with the petals, either equal to them in number, and alternating with them, or twice as many; those opposite the petals being shortest, and arriving at perfection after the others; filaments distinct, subulate; anthers oval, two-celled, bursting lengthwise. Nectariferous scales several, one at the base of each ovarium sometimes obsolete. Ovaria of the same number as the petals, opposite to which they are placed around an imaginary axis, usually distinct, but in some of the anomalous genera rather concrete, all one-celled, and tapering into one stigma each, opening when ripe by a longitudinal chink in front, but in one genus on the back. Seeds attached to the margins of the suture, in two rows, variable in number. Albumen thin, fleshy. Embryo straight in the axis of the albumen, having the radicle directed to the hilum. (*G. Don.*)

Description, &c.—The plants belonging to this order have all fleshy stems and leaves, and generally ornamental flowers produced in clustered heads or cymes. "The species," says Mr. Don, "are found in the dry situations where not a blade of grass nor a particle of moss can grow, on naked rocks, old walls, sandy hot plains, alternately exposed to the heaviest dews of night, and the fiercest rays of the noon-day sun. Soil is to them a something to keep them stationary, rather than a source of nutriment, which in these plants is conveyed by myriads of mouths invisible to the naked eye, but covering all their surface, to the juicy beds of cellular tissue which lie beneath them." The order includes numerous genera, some of which contain only small insignificant plants, while others have flowers of great magnitude and remarkable beauty

GENUS I.

CRASSULA *Lin.* THE CRASSULA.

Lin. Syst. PENTANDRIA PENTAGYNIA.

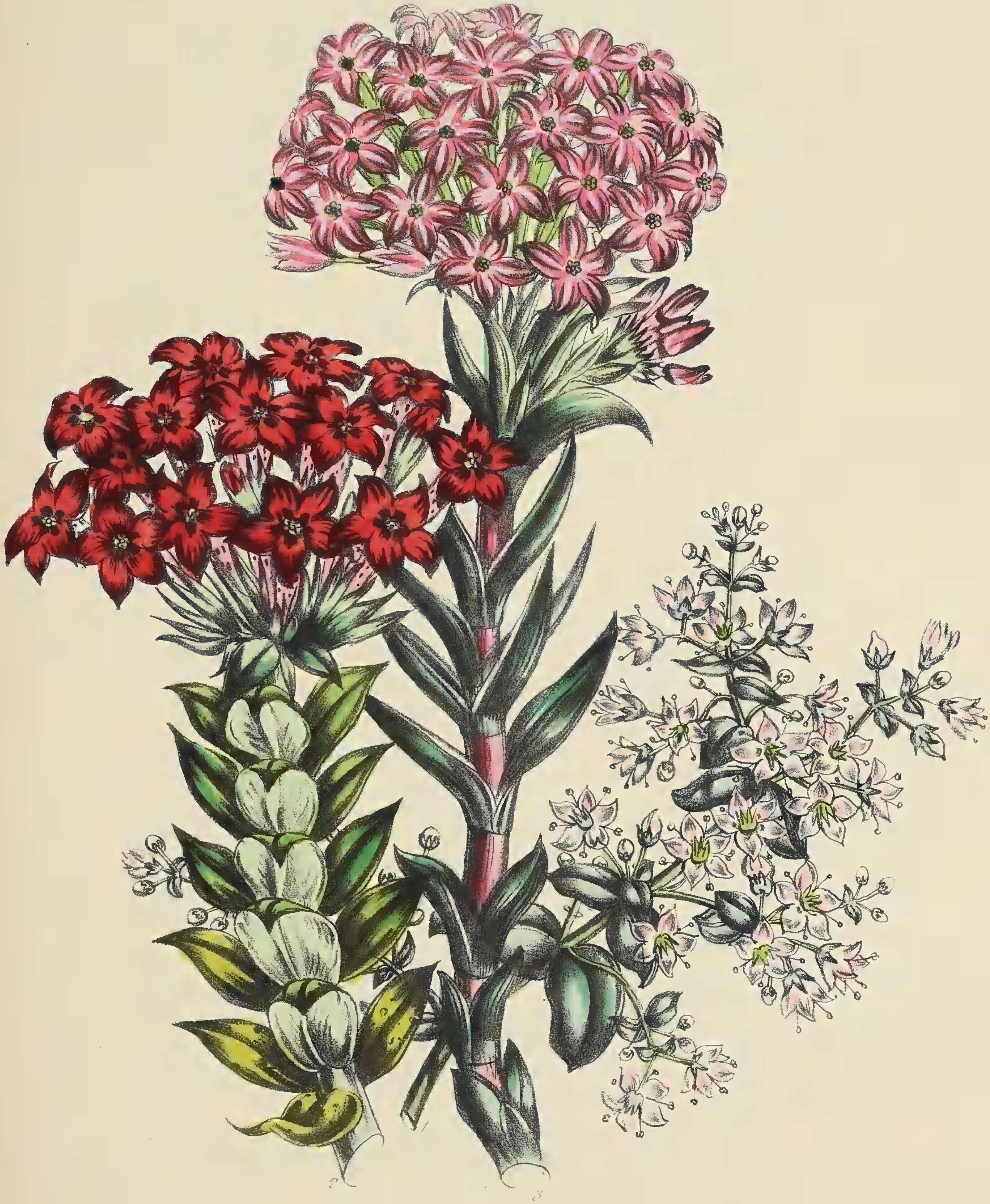
Generic Character.—Calyx five-parted. Petals five, distinct. Stamens five; filaments subulate. Scales five. Carpels five, many-seeded. (*G. Don.*)

Description, &c.—The species are fleshy shrubs or herbaceous plants, generally natives of the Cape of Good Hope. The genus was formerly very extensive; but it has been circumscribed by modern botanists, who have divided the old genus *Crassula* into five or six modern ones. The word *Crassula* is derived from *crassus*, thick, in reference to the fleshy leaves.

1.—CRASSULA ARBORESCENS *Willd.* THE TREE CRASSULA.

Synonymes.—C. Cotyledon *Curt.*; Cotyledon arborescens *Mill.*
Engraving.—Bot. Mag., t. 384.
Specific Character.—Stem shrubby, erect, terete. Leaves opposite, roundish, mucronate, fleshy, flat, glaucous, dotted above, glabrous. Cymes trichotomous. (*G. Don.*)

Description, &c.—A very curious plant, with thick whitish leaves, which are edged with pink and covered over the surface with very small dots. The flowers are pretty, and of a pale pink; but they are very rarely



1. Crassula centauroides 2. Kalosanthes coccinea 3. Kalosanthes versicolor.

produced, some of the plants in the Chelsea Botanic Garden having grown large enough to form small trees without showing the slightest indication of bearing flowers. The species is a native of the Cape of Good Hope, whence it was introdcced in 1739.

2.—CRASSULA CENTAUROIDES *Willd.* THE CENTAURY-LIKE CRASSULA.

Synonyme.—C. pellucida *Jacq.*
Engravings.—Bot. Mag., t. 1765; and our *fig.* 1, in Pl. 32.
Specific Character.—Stems herbaceous, dichotomous, prostrate. Leaves opposite, sessile, flat, oblong-ovate, glabrous, punctately toothed on the margins. Peduncles axillary, one-flowered. (*G. Don.*)

Description, &c.—This is a very pretty little plant, with prostrate stems and rose-coloured flowers. The species is a native of the Cape of Good Hope, whence it was introduced about 1820.

OTHER SPECIES OF CRASSULA.

There are many other species of this genus, most of which have either white or pinkish flowers. They all require a dry sandy soil, which, when they are grown in pots, is generally mixed with brick rubbish. When cuttings are made from them, they require to be dried for a few days after they have been prepared before they are planted. All the species should be kept in dry situations, and when in a greenhouse they should be placed on shelves, and never on either bricks or the ground.

GENUS II.

KALOSANTHES *Haw.* THE KALOSANTHES.

Lin. Syst. PENTANDRIA PENTAGYNIA.

Generic Character.—Calyx five-lobed. Petals united into a five-parted corolla with the tube cylindrical, two or three times longer than the spreading limb. Stamens five, inserted in the tube of the corolla. Glands and carpels five. (*G. Don.*)

Description, &c.—The species belonging to this genus are succulent shrubs with opposite leaves and large heads of ornamental flowers. The name of *Kalosanthes* is taken from two Greek words, signifying a beautiful flower.

1.—KALOSANTHES COCCINEA *Haw.* THE SCARLET KALOSANTHES.

Synonymes.—Larochea coccinea *Pers.*; Crassula coccinea *Lin.*; Dietrichia coccinea *Tratt.*; Cotyledon africana *Comm.*
Engravings.—Bot. Mag., t. 495.; and our *fig.* 2, in Pl. 32.
Specific Character.—Leaves connate and sheathing at the base, ovate-oblong, acutish. (*G. Don.*)

Description, &c.—This species forms a shrub from one to three feet high. It is the oldest plant of its genus in this country, having been introduced in 1714. It is a native of the Cape of Good Hope, and requires careful treatment in this country, being liable not only to be injured by frost, but to damp off.

2.—KALOSANTHES VERSICOLOR *Haw.* THE RED AND WHITE KALOSANTHES.

Synonymes.—Crassula versicolor *Burch.*; Rochea versicolor *Dec.*
Engravings.—Bot. Reg., t. 320; and our *fig.* 3, in Pl. 32.
Specific Character.—Leaves oblong-lanceolate, acute, connate and sheathing at the base. Stem erect, branched. Flowers in umbellate heads. (*G. Don.*)

Description, &c.—A very handsome species, a native of the Cape of Good Hope, whence it was introduced in 1817, and where it has been found growing at a considerable height above the level of the sea, some of the seeds having been collected on the Table Mountain. From the lofty situations in which this species grows, it is more hardy than most of the Cape plants; and as it flowers freely, it is well deserving of cultivation. The flowers are said in some specimens to give out a delightful fragrance at night. In old plants the stem becomes woody at the base.

3.—KALOSANTHES ODORATISSIMA *Haw.* THE SWEET-SCENTED KALOSANTHES.

Synonymes.—Crassula odoratissima *Andr.*; Larochea odoratissima *Pers.*; Dietrichia odoratissima *Tratt.*; Rochea odoratissima *Dec.*

Engravings.—Bot. Rep., t. 26; Lodd. Bot. Cab., t. 1029.

Specific Character.—Leaves linear-lanceolate, gradually acuminated, connately stem-clasping. Flowers in umbellate heads. Segments of the corolla oblong, acutish. (*G. Don.*)

Description, &c.—A very handsome species with yellow flowers, which have the scent of those of the Tuberose. The species is a native of the Cape of Good Hope, whence it was introduced in 1793. There is a variety with white flowers, and another, the flowers of which are partly white and partly red.

OTHER SPECIES OF KALOSANTHES.

There are numerous other species of this genus, but they are very seldom seen in British greenhouses.

GENUS III.

COTYLEDON *Dec.* THE COTYLEDON.

Lin. Syst. DECANDRIA PENTAGYNIA.

Generic Character.—Calyx five-parted, much shorter than the tube of the corolla. Corolla gamopetalous; tube ovate-cylindrical; limb five-lobed, spreadingly reflexed or revolute; lobes obtuse. Stamens ten, adnate to the base of the tube of the corolla; the upper part free, exserted or almost inclosed. Scales oval. Carpels five, continuous with the styles, which are subulate. (*G. Don.*)

Description, &c.—The plants belonging to this genus are all fleshy shrubs, natives of the Cape of Good Hope, with ornamental flowers, which are generally bell-shaped and produced in drooping panicles. The name of *Cotyledon* is derived from the Greek word *Kotyle*, which signifies a cavity, in allusion to the cup-like shape of the leaves of some of the species. The species are numerous, but many of them are only very imperfectly known.

1.—COTYLEDON ORBICULATA *Lin.* THE ROUND-LEAVED COTYLEDON.

Engraving.—Bot. Mag., t. 321.

Specific Character.—Leaves opposite, flat, obovately spatulate, obtuse, with an acumen, glaucous and mealy, margined with red. Flowers panicled. Caudex erect, branched. (*G. Don.*)

Description, &c.—This is a very singular-looking plant from its white leaves, which have a narrow margin of red, and its pink flowers, which in their shape resemble the bells of a Hyacinth, though they are produced on a drooping stem instead of on one growing decidedly erect. This species is one of the oldest succulent plants in British greenhouses, having been introduced in 1690. It will flower when young and of a small size, and in this respect it differs essentially from *Crassula Cotyledon*, a plant to which in other respects it bears considerable resemblance. It is now very seldom seen in British greenhouses, though it well deserves a place in them, as it flowers freely, grows rapidly, and is easily increased by cuttings. It is also well suited for a window plant, as, like other succulents, it does not appear to suffer from being exposed to the dry confined air of a living-room. There are several varieties mentioned in books, but the principal difference is in the form of the leaves.

2.—COTYLEDON CORUSCANS *Haw.* THE GLITTERING COTYLEDON.

Synonyme.—C. canalifolia *Phil. Mag.*

Engravings.—Bot. Mag., t. 2601 ; Lodd. Bot. Cab., t. 1030.

Specific Character.—Leaves decussate, aggregate, cuneate-oblong, channelled, with thickened margins, apiculate, covered with white mealiness. Flowers pendulous, disposed in umbellate panicles. (*G. Don.*)

Description, &c.—A showy-looking plant with very singular leaves, which are deeply channelled on the upper surface, having very thick incurved margins, and which are terminated with a purple mucro. The flower-scape grows above a foot long, and terminates in an umbel-formed panicle of numerous orange-red, long, pendulous flowers, the colour of which deepens with age. The species is a native of the Cape of Good Hope, and was introduced in 1818.

3.—COTYLEDON DECUSSATA *Sims.* THE CROSS-LEAVED COTYLEDON.

Synonyme.—C. papillaris *Lin.*

Engravings.—Bot. Mag., t. 2518 ; and Bot. Reg., t. 915.

Specific Character.—Leaves opposite, terete-ovate, fleshy, glabrous, acute, erect. Flowers in panicles, glabrous. Caudex decumbent, clothed with fine villæ. (*G. Don.*)

Description, &c.—This species, though very curious, is not nearly so ornamental as either of the other kinds, and it is easily distinguished by its cylindrical and very fleshy leaves.

OTHER SPECIES OF COTYLEDON.

These are very numerous, but generally speaking there is a sufficient resemblance between all the species to render it easy to ascertain what genus they belong to, and at the same time to render it difficult, by mere words, to point out the difference between them. One species, however, is so distinct from the rest as to merit a particular description. This is *C. curviflora* Sims, the flowers of which are tubular, yellow streaked with red, and have a purple mouth, the tube of the flowers being curved, and the peduncles twisted in what appears a somewhat fantastical manner. The leaves are linear and semicylindrical, and the stem, which is fleshy, is rough in the lower part, from the vestiges of former leaves.

GENUS IV.

ECHEVERIA *Dec.* THE ECHEVERIA.

Lin. Syst. DECANDRIA PENTAGYNIA.

Generic Character.—Calyx five-parted; sepals erect, referrible to leaves, united at the very base. Petals five, also united at the base, erect, thick, stiffish, thickest at the middle nerve, and nearly trigonal at the base. acute. Stamens ten, shorter than the petals, and adnate to them at the base. Scales five, short, obtuse. Carpels five, ending each in a subulate style. (*G. Don.*)

Description, &c.—The plants belonging to this genus are all ornamental fleshy shrubs, natives of Mexico, with rather singular but very handsome flowers. Most of the species are only of late introduction. The genus is named in honour of M. Echeveri, the artist employed to make the drawings in the *Flora Mexicana*, edited by Moçino and Sesse.

1.—ECHEVERIA RETUSA *Lindl.* THE BLUNT-LEAVED ECHEVERIA.

Engraving.—Bot. Reg. for 1847, t. 57.

Specific Character.—Leaves obovate-spatulate, somewhat retuse, glaucous, crenulate ; the stem-leaves linear-oblong, entire. Panicle dense, subcorymbose ; branches few-flowered. Sepals linear, unequal, shorter than the corolla. Petals acutely keeled, gibbous at the base.

Description, &c.—This species was raised from seeds received from Mr. Hartweg in February, 1846, and it is said " to have been collected on rocks near Anganguco, in Mexico." It is a dwarf plant, the leaves of which are at first closely imbricated, but "by degrees separate as the stem lengthens; they are broad at the point, but acute when young; when old they are extremely blunt, and irregularly crenated, as well as bordered with purple. The flower-stem is from nine inches to a foot high, and bears at the very summit a compact panicle of handsome crimson flowers, covered with a delicate bloom, and orange-coloured inside." It is added in the "Botanical Register," from which work the above extract is made, that "it is a pretty greenhouse half-shrubby plant, and grows freely in a light mixture of sandy loam with leaf-mould and plenty of sand. It is easily increased by the leaves, rises from one to two feet in height, and flowers freely from November to April, that is to say, throughout the winter." Among the other valuable qualities belonging to this plant may be added, that the flowers retain their beauty for several days after they have been cut and placed in water. A specimen which I have in my possession, which has been cut nearly a week, is now (the 31st of January, 1848) as fresh and beautiful in its appearance as if it had only just been taken from the plant.

2.—ECHEVERIA ACUTIFOLIA *Lindl.* THE SHARP-LEAVED ECHEVERIA.

Engraving.—Bot. Reg. for 1842, t. 29.

Specific Character.—Leaves subrhomboid, very acute, concave; those of the stem somewhat rosulate. Flowers in dense panicles, with cylindrical branches bearing three or four flowers each. Sepals acute, much shorter than the petals.

Description, &c.—This is a most ornamental species, the flowers being richly tinted with a most brilliant scarlet and golden yellow. The leaves, which are large and concave, are of a bright green tinged with red at the base, and the stems are pink. All the colours are remarkably brilliant, and the plant altogether has a remarkably striking and showy appearance. The species is a native of Mexico, whence it was introduced in 1841.

3.—ECHEVERIA CÆSPITOSA *Dec.* THE TUFTED ECHEVERIA.

Synonymes.—Cotyledon cæspitosa *Haw.*; C. linguiformis *Ait.*; C. reflexa *Willd.*; Sedum Cotyledon *Jacq.*

Specific Character.—Leaves rosulate, narrow, tongue-formed, obcuneated at the apex, and rather mucronate. Flowers cymose. (*G. Don.*)

Description, &c.—This is the oldest species of the genus in British greenhouses, having been introduced in 1796. The species is less ornamental than many of the more modern kinds, but it forms an agreeable variety to them, as its flowers are yellow and disposed in cymes instead of panicles.

OTHER SPECIES OF ECHEVERIA.

E. GRANDIFOLIA *Haw.*

This species is so exceedingly glaucous as to look perfectly blue at a little distance. The flowers are yellow tinged with red. The species was introduced in 1828, and it is figured in "Sweet's British Flower Garden," t. 275. In this work it is observed, "a singular character belonging to this genus is, that the leaves are slightly attached to the stems, though they appear firmly attached; but by moving them upwards at the back, it will be seen that they are quite loose, and come off easily, as if they were only stuck on; those, if dried a little, and then planted, will soon root and produce young plants."

E. GIBBIFLORA *Dec.*

The flowers of this species bear considerable resemblance to those of *E. acutifolia*, but the leaves are more obtuse. The flowers also grow on long drooping zigzag shoots, and are much less brilliantly coloured. The species is a native of Mexico, and it was introduced in 1826.

E. COCCINEA *Dec.*

The plant is softly pubescent, and the spikes of flowers are elongated and leafy. The flowers are scarlet on the outside, and of a pale red within. The stamens are yellow. This species is figured in Loddiges' "Botanical Cabinet" under the name of *Cotyledon coccinea.* It is a native of Mexico, and was introduced in 1816.

E. RACEMOSA *Schlecht.*

A native of Mexico, found abundantly on walls at Jalapa. The flowers, which are small and compact in form, are disposed in an elongated spike-formed raceme; they are scarlet, with pale yellow inside. It is stated in the "Botanist," where the species is figured, that this plant "grows on Monte Serata, and is called Talapulacajhata by the aboriginal inhabitants, among whom it serves, like the *Myosotis palustris*, or Forget-me-not among European nations, as an emblem of remembrance." It was introduced in 1836.

E. LURIDA *Haw.*

This species is remarkable for the colour of its root-leaves, which have a peculiar livid hue from being deeply stained with dull purple. The flowers are very small, and of a peculiarly rich scarlet; they are disposed in racemose spikes. The species, like the others, is a native of Mexico, and was introduced in 1830.

E. SCHEERII *Lindl.*

Though this species is an abundant flowerer, it can scarcely be called handsome, from its untidy habit of growth and the dingy colour of its flowers. The root-leaves are glaucous and remarkably large. The species was introduced in 1842.

E. ROSEA *Lindl.*

This is a remarkably handsome species, from its yellow flowers and bright pink bracts, which give it a very gay appearance. It has a tall stem, which is tinted yellow; and the leaves, which are produced in tufts, have a dark reddish hue on the underside. Like all the species of the genus, it should be kept in the greenhouse all the year, but it will not flower unless it has abundance of light.

E. SECUNDA *Lindl.*

The flowers of this species closely resemble those of *E. racemosa*, excepting that they are all produced on one side. The plant has no proper stem, and the flower-scape rises from one side of a tuft of leaves closely resembling those of the common Houseleek. The species was introduced in 1839. Unlike most of the other species of the genus, this kind flowers in summer.

Two other species have been mentioned in books: *E. bracteolata*, which was found by Mr. Edward Otto in the Caraccas in 1840, but which is by no means ornamental; and *E. teretifolia*, the leaves of which are cylindrical and almost loose at the base, and the flowers of which are said to resemble those of *E. secunda.*

GENUS V.

SEDUM *Lin.* THE STONECROP.

Lin. Syst. PENTANDRIA MONOGYNIA.

Generic Character.—Calyx five-parted; sepals ovate, usually turgid, leaf-formed. Petals five, generally spreading. **Stamens ten.** Nectariferous scales entire or hardly emarginate. Carpels five. (*G. Don.*)

Description, &c.—Most of the plants contained in this genus are hardy, and they consist of herbs or half-shrubs, the stems of which are usually branched, and the flowers are produced in flat heads, being mostly yellow, but sometimes white, blue, or a purplish pink. The most ornamental species of the genus, and the only one which can be called a greenhouse plant, is *Sedum Sieboldii.* This plant when grown in a pot and supplied with abundance of light and air, is one of the most ornamental in the whole range of greenhouse plants, as it spreads widely on every side, and is completely covered with its very ornamental heads of flowers. The species is a native of Japan, whence it was introduced in 1836.

GENUS VI.

SEMPERVIVUM *Lin.* THE HOUSELEEK.

Lin. Syst. DODECANDRIA DODECAGYNIA.

Generic Character.—Calyx from six to twenty-parted. Petals from six to twenty, oblong, acute. Stamens double the number of the petals. Scales at the base of the carpels toothed or jagged at the apex. Carpels equal in number to the petals. (*G. Don.*)

Description, &c.—The common Houseleek is one of the best known of English plants, not only because it is common, but because it has been long used for poultices in domestic medicine. It is not, however, so generally known that there are many species of Houseleek which are highly ornamental greenhouse plants; these latter being principally natives of the Canary Islands and Madeira. The popular name of Houseleek alludes to the plants being found frequently in a wild state growing on the roofs of houses. The name of *Sempervivum*, which signifies to live for ever, alludes to the extraordinary tenacity of life which has been remarked in all the species.

1.—SEMPERVIVUM GLUTINOSUM *Ait.* THE CLAMMY HOUSELEEK.

Engravings.—Bot. Mag., t, 1963; and Bot. Reg., t. 278.

Specific Character.—Stem frutescent. Leaves cuneiform, viscid, rather scattered, fringed with adpressed cartilaginous ciliæ. Petals eight or ten. (*G. Don.*)

Description, &c.—The flowers of this species are of a golden-yellow, and they are produced on a large loose panicle, which is divided into numerous branches, the scape growing to the height of two feet or more. "The foliage is suffused with a transparent viscous confluent excretion, and looks as if newly varnished. Small insects are ensnared in this slimy surface." The fishermen of Madeira are said to rub their nets with the fresh leaves of this species, and afterwards to dip them in a solution of soda, or some other alkali, which renders them as durable as if they had been tanned. The species is a native of Madeira, whence it was introduced in 1777.

2.—SEMPERVIVUM CÆSPITOSUM *C. Smith.* THE TUFTED HOUSELEEK.

Synonymes.—S. ciliatum *Sims*; S. ciliare *Haw.*; S. Simsii *Sweet*; S. barbatum *Horn.*

Engraving.—Bot. Mag., t. 1978.

Specific Character.—Radical leaves oblong-oval, acute, ciliated, and spotted. Stem-leaves ligulate. Flowers on corymbose panicles.

Description, &c.—This plant in its mode of growth bears considerable resemblance to the common Houseleek, but both its flowers and leaves are very much more ornamental. It was discovered in the Island of Teneriffe by Professor Smith, who was one of the sufferers in the unfortunate expedition up the Congo. All the Houseleeks are remarkable for their tenacity of life, and a singular instance of this quality was given by the plant in question, as a specimen of it which had been kept eighteen months in paper in the Herbarium of Professor Smith grew immediately on being put into the ground. The species is a native of the Canary Islands, and it was introduced in 1815.

OTHER SPECIES OF SEMPERVIVUM.

S. SMITHII *Sims.*

This species was found at the same time as the last by Professor Smith in the Island of Teneriffe. It is a small deciduous shrub, with spreading branches, which are extremely prolific in flowers. The leaves are spotted on the underside only, and when they fall off, a scar is left on the stem, on which is a row of stiff hairs. These hairs increase in length as the stem elongates, so that when the plant is required of a considerable size, the stem is quite hairy. The species was introduced in 1815.

S. ARBOREUM *Lin.*

This species, which is the oldest of the genus in our greenhouses, having been introduced before 1640, is generally called the Tree Houseleek. It has very showy flowers, which, however, do not appear every year; and its leaves are rather ornamental, having a delicate white margin. In its native country this plant grows to the height of from seven to ten feet, with a stem as thick as a man's arm. It is most abundant in Greece, but it has also been found in Portugal, Barbary, and in the Island of Cyprus.

S. TORTUOSUM *Ait.*

This is a shrubby plant of low growth, producing numerous fleshy evergreen leaves growing close together; and its flowers, which are of a brilliant yellow, glitter like little stars, and bear more resemblance to those of the different kinds of *Sedum* than to those of the Houseleek. It is a native of the Canary Islands, and was introduced in 1779.

S. ARACHNOIDEUM *Lin.*

This species, which is frequently found in old greenhouses, is generally known there by the name of the Cobweb Sedum, having been originally supposed to belong to that genus. When not in flower it has a very singular appearance, as it grows in tufts like the common Houseleek, and the tops of the leaves being woolly, when they expand "they carry this woolly substance with them, which being thus extended, assumes the appearance of a cobweb." The species is a native of the Alps of Europe and the Pyrenees, and it was introduced in 1699. The flowers differ from those of most of the other species of the genus in being of a deep pink or bright rose-colour.

S. MONANTHES *Ait.*

This species, which is a native of the Canary Islands, is remarkable for having only one flower on each peduncle, from which peculiarity it was formed into a new genus by Haworth, under the name of *Monanthes polyphylla.*

S. URBICUM *Horn.*

This species was one of those discovered by Professor Smith on the roofs of houses in Teneriffe, and it is remarkable for its very large, dense, pyramidal panicle of flowers.

S. CALICIFORME *Haw.*

This is a very singular plant, and according to the description in the *Botanical Register*, "the leaves are glaucous, fleshy, very blunt, with a thin curled whitish edge. Before flowering they are so placed as to represent a small chalice, whence the name has been taken. The flowering stem appears to be glabrous, but the pedicels and the leaves of the calyx are sparingly covered with fine transparent glandular hairs. The flowers are bright yellow, with filiform petals, and a single row of stamens of the same colour as the petals, and about half their length." This was another species found by Professor Smith in the Island of Teneriffe.

OTHER GENERA BELONGING TO CRASSULACEÆ.

SEPTAS *Lin.*

This is a very small genus, the name of which is derived from the Latin word *septem*, seven, from the number seven prevailing in the parts of fructification. The species are natives of the Cape of Good Hope, and they have tuberous roots, red stems, and white flowers.

GLOBULEA *Haw.*

The plants composing this genus are also natives of the Cape of Good Hope, and they are not remarkable for their beauty. The flowers are small and whitish, and in some of the species they never open.

ROCHEA *Dec.*

The species of this genus are tall fleshy shrubs with masses of flowers, which are generally tinged with scarlet, but which are rarely found fully open. They are all natives of the Cape of Good Hope.

CHAPTER XXX.

FICOIDEÆ *Juss.*

Essential Character.—Calyx constantly of a definite number of sepals, usually five, but varying from four to eight, more or less united at the base, either cohering with the ovarium, or almost distinct from it, equal or unequal, quincuncial or valvate in æstivation. Petals indefinite, coloured, narrow, a little combined at the base, sometimes wanting, but in that case the inside of the calyx is coloured. Stamens indefinite, arising from the calyx, distinct; anthers oblong, incumbent. Ovarium distinct, or adnate to the calyx, many-celled, crowned by numerous distinct stigmas. Capsule either girded by the fleshy calyx or naked, usually many-celled, but often five-celled, opening in a stellate manner at the apex. Seeds attached to the inner angle of the cells, definite or indefinite. Embryo lying on the outside of a mealy albumen, curved. (*G. Don.*)

Description, &c.—The genus *Mesembryanthemum* is the principal one in this order, as though there are a few other genera, the plants contained in them are not very ornamental.

GENUS I.

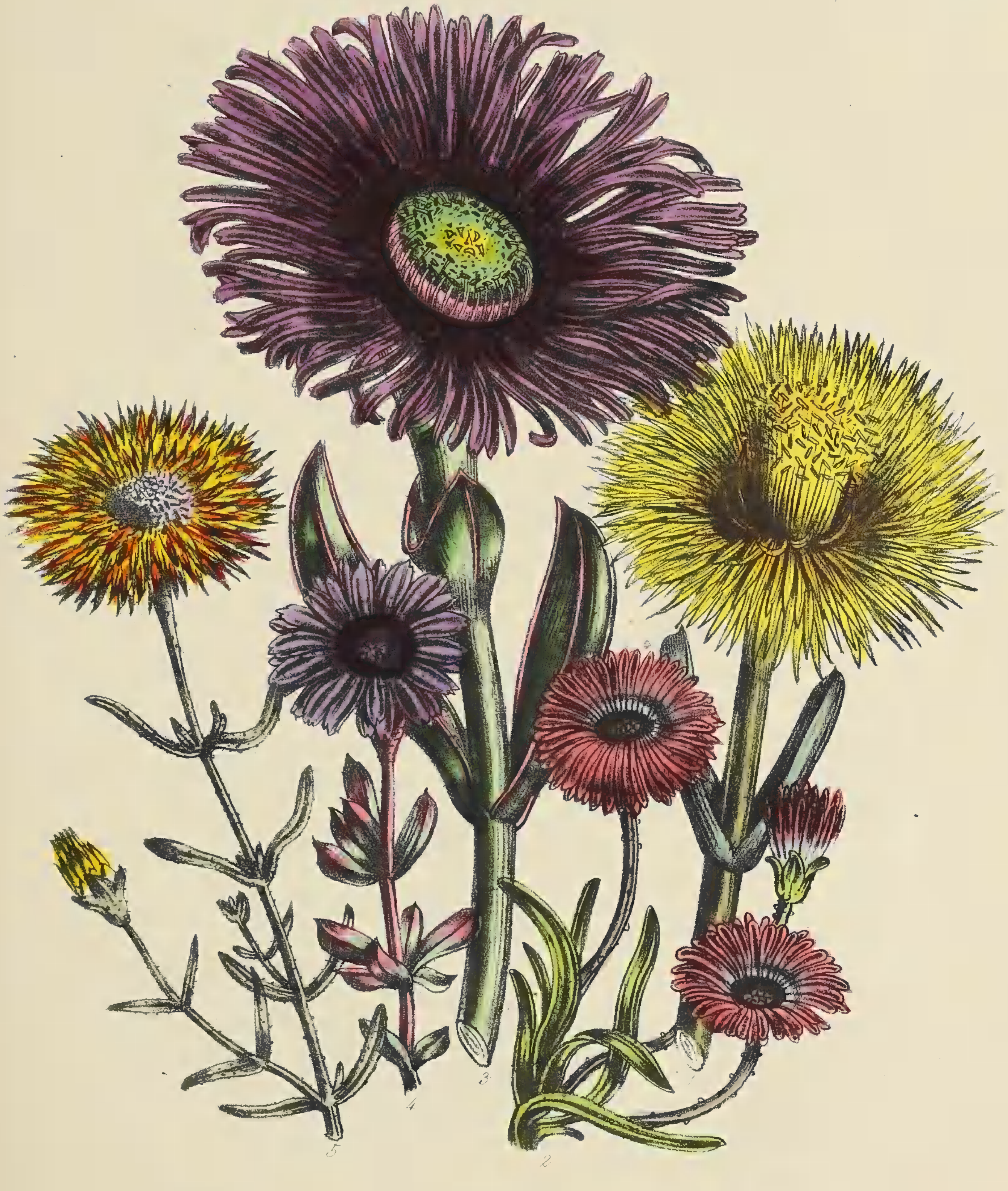
MESEMBRYANTHEMUM *Lin.* THE FIG-MARIGOLD.

Lin. Syst. ICOSANDRIA TETRA-POLYGYNIA.

Generic Character.—Calyx of five, rarely of two or eight, sepals. Petals indefinite, linear. Stamens indefinite, inserted in the top of the calyx along with the petals. Capsule adnate to the calyx, from four to many-celled; cells many-seeded. (*G. Don.*)

Description, &c.—This genus consists entirely of succulent plants, nearly all natives of the Cape of Good Hope. The flowers are generally very ornamental, and open to the heat of the sun, most of them closing in the evening. The seed-vessels when ripe only open in moist weather, as that is most suitable to their germination in the sandy plains in which the plants naturally grow. As there are nearly three hundred and fifty species, which are too numerous for a work like the present, I shall only describe those species of which I have given figures. The name of *Mesembryanthemum* is derived from two Greek words, signifying mid-day flower, because many of the species flower in the middle of the day, remaining expanded only while exposed to the direct influence of the sun's rays.

Pl. 37



1 Mesembryanthemum albidum. 2 Mesembryanthemum tricolor. 3 Mesembryanthemum rubro-cinctum.
4 Mesembryanthemum inclaudens. 5 Mesembryanthemum micans.

1.—MESEMBRYANTHEMUM ALBIDUM *Lin.* THE WHITE-LEAVED FIG-MARIGOLD.

Engravings.—Bot. Mag., t. 1824; and our *fig.* 1, in Pl. 33.

Specific Character.—Leaves very thick, subulate, three-cornered, obtuse, with an acumen, but semiterete at the base, quite entire.

Description, &c.—This species is one of those which are rather shy of flowering, and when it is in blossom, the flowers open about eight in the morning, and continue open for two hours only. They then close till about eight in the evening, when they again expand and remain open for two hours longer. They have an agreeable fragrance, and are very ornamental. The plant is propagated by cuttings, which, like those of most other succulents, require to be dried before they are put into the ground. The species is a native of the Cape of Good Hope, whence it was introduced in 1714.

2.—MESEMBRYANTHEMUM TRICOLOR *Willd.* THE THREE-COLOURED FIG-MARIGOLD.

Engravings.—Bot. Mag., t. 2144; Paxt. Mag. of Bot., vol. ix., p. 219; and our *fig.* 2, in Pl. 33.

Specific Character.—Subcaulescent. Leaves dotted, linear-spatulate, connate, convex on the lower surface, somewhat hollow above.

Description, &c.—A very pretty little annual plant, which should be sown in pots in the month of March, and the pots plunged in a hotbed. When the plants come up they should be removed into smaller pots in very sandy soil, and after being gradually hardened, they should be placed in a greenhouse, where they should stand very near the light. In very warm sunny situations, the pots may occasionally be plunged in the open ground, where the plants will produce a brilliant effect during the summer months from the great abundance and brilliant colour of their flowers. Of these plants Paxton observes, "wherever they may be kept, they should always be well exposed to the sun, for the flowers will not expand except under the influence of its rays. They continue blooming for several months, and are interesting even when covered with nothing but seed-vessels." For saving seeds, he adds, "a few plants should be reserved in a frame, and from six to a dozen capsules left on each, removing all the other flowers that show themselves." The species is a native of the Cape of Good Hope, and was introduced in 1795.

3.—MESEMBRYANTHEMUM RUBROCINCTUM *Haw.* THE RED-EDGED FIG-MARIGOLD.

Engravings.—Bot. Reg., t. 1732; and our *fig.* 3, in Pl. 33.

Specific Character.—Stem ascending, branched. Peduncle one-flowered. Leaves dark-green edged with red, very smooth. Bracteas connate. Flowers very large.

Description, &c.—This is generally considered the largest species of the genus, and it is remarkable for the splendour of its flowers, which are extremely large, and for the red border to the leaves, which is carried up along the keel on the back. The species is a native of the Cape of Good Hope, whence it was introduced about 1830. It is much more hardy than most of the plants belonging to the genus, and has remained for several years in the open air, being only protected from the frost by a mat.

4.—MESEMBRYANTHEMUM INCLAUDENS *Haw.* THE NEVER-CLOSING FIG-MARIGOLD.

Engravings.—Bot. Mag., t. 1663; Bot. Rep., t. 388; and our *fig.* 4, in Pl. 33.

Specific Character.—Leaves hatchet-shaped, sharply crenulated. Corolla always open. Inner petals roundish.

Description, &c.—"This," it is observed in the 'Botanical Magazine,' "is one of the most desirable species of this numerous genus, both on account of the brilliancy of its flowers and because they remain fully expanded night and day. Flowering branches when cut off will continue unchanged for days together, so that they may be worn in the hair or bosom without danger of drooping from the heat of the ball-room; but they are without scent." The redness of the leaves and branches deepens in intensity in proportion as the plant is fully exposed to the sun and air. The species is a native of the Cape of Good Hope, whence it was introduced in 1802.

5.—MESEMBRYANTHEMUM MICANS *Lin.* THE GLITTERING FIG-MARIGOLD.

Engravings.—Bot. Mag., t. 448; and our *fig.* 5, in Pl. 33.

Specific Character.—Stem erect. Branches scabrous. Leaves semicylindrical, bluntish, somewhat recurved, glittering from papulæ. Lobes of calyx and petals acutish. (*G. Don.*)

Description, &c.—This species has received its name of glittering from the number of little pustules filled with water that are conspicuous on the stem-leaves, and which have obtained for some of the species the name of Ice Plant. The flowers are handsome when the sun shines on them, but they lose their beauty the moment the sun withdraws his rays; and even in broad day-light, when the sun does not shine full upon them, they assume a somewhat ragged appearance which is not at all ornamental. The species is a native of the Cape of Good Hope, and it was introduced in 1716.

CHAPTER XXXI.

CACTACEÆ *Dec.*

Essential Character.—Calyx composed of many sepals, usually indefinite in number and confounded with the petals, united and adnate a great length to the ovarium. Petals disposed in two or more series, hardly distinguishable from the inner sepals, and sometimes united to them. Stamens indefinite, disposed in many series, more or less cohering with the petals or inner sepals; filaments slender, filiform; anthers ovate, versatile, two-celled. Ovarium ovate, fleshy, one-celled, with numerous ovula arranged on parietal placentas, which are equal in number to the lobes of the stigma. Style filiform, sometimes full and sometimes fistular. Stigmas numerous, either spreading or connected into a cluster. Fruit fleshy, one-celled, many-seeded, either smooth and crowned by the calyx, or covered with scales, scars, or tubercles, and umbiculate at the apex. Seeds when young parietal, but when mature, embedded in the pulp with which the cells are filled, oval or obovate, without albumen.

Description, &c.—The plants belonging to this order are all fleshy or succulent shrubs, very variable in habit, and frequently of the most grotesque forms. The stems are usually angular, winged, or beset with tubercles, and when they are cylindrical they are usually jointed. The leaves are frequently wanting, and when they are present they are generally small, and soon fall off. The plants are furnished with numerous prickles or bristles, rising in tufts from the axils of the leaves when there are any leaves, and when there are not, disposed in the angles of the stems and rising from tubercles. The flowers are generally very ornamental, and the fruit, which is eatable, bears considerable resemblance to that of the gooseberry, though it is less acid. There are several genera, all of which were once comprised in the Linnæan genus *Cactus;* which genus modern botanists have completely set aside. These genera, however, are very distinct from each other, and may be easily distinguished, when seen, by the form of their stems even when not in flower. Thus the species of Mammillaria are known by their projecting tubercles; the different kinds of Melocactus by their large ribs, and by a curious kind of spadix or flowering head fixed on the upper part of the plant, which is densely covered with short woolly brown bristles. The species of Echinocactus resemble those of the Melocactus, but without the head; those of Cereus have long slender stems or leaf-like stems as in *Cereus speciosus.* The kinds of Opuntia have all fleshy leaf-like stems; and those of Pereskia, which require a hot moist stove, are like miniature trees. Most of the plants contained in this order require a stove in Great Britain; and only a few species of the genus *Cereus* can be flowered in a greenhouse.

GENUS I.

CEREUS *Dec.* THE TORCH THISTLE.

Lin. Syst. ICOSANDRIA MONOGYNIA.

Generic Character.—Sepals very numerous, imbricate, adnate to the base of the ovarium, united into an elongated tube; outer ones shorter and like a calyx; middle ones longer and coloured; innermost ones petal-formed. Style multifid at the apex. Berry areolate, tubercular or scaly from the remains of the sepals. (*G. Don.*)

Description, &c.—The species included in this genus differ from those of the other genera in their stems being excessively elongated, and having a woody axis in the centre. The species vary very much in their habits, but they all produce their flowers from the fascicles of spines, or when the stems are angular from the indentures on the angles. Most of the plants belonging to the genus require a stove in this country, but some few will succeed in a greenhouse. Some of the species contained in the genus have broad leaf-like stems, on which the flowers are produced, and these are placed in another genus by Mr. Haworth, under the name of *Epiphyllum*. The meaning of the word *Cereus* is pliant, in allusion to the stems of some of the plants being flexible. Only one species is properly a greenhouse plant.

1.—CEREUS FLAGELLIFORMIS *Mill.* THE CREEPING CEREUS.

Synonyme.—Cactus flagelliformis *Lin.*
Engraving.—Bot. Mag., t. 17.
Specific Character.—Stems prostrate with about ten angles. Tubercles crowded, bearing bristles. Style rather shorter than the petals. (*G. Don.*)

Description, &c.—This is one of the oldest inhabitants of our greenhouses, having been introduced in 1690. The stems are nearly round, and hang down in such a manner as to fully authorise the specific name of *flagelliformis*, which signifies whip-like, as they certainly look very much like the thong of a carter's whip. The flowers are very beautiful, and produced in considerable abundance. The species is a native of South America, and does not require more than greenhouse heat. It is also a very useful plant for growing in living rooms, as it is not injured by hot dry air. It may either be suspended in a pot hung from the roof, so that the stems may hang down, or it may be trained against a trellis work. Though this plant is so different in its outward appearance from the large triangular-stemmed kinds of Cereus, if a part of the stem of each of them be cut off, it will be seen that they have exactly the same internal structure, viz. that there is a woody axis in the centre of the stem, and a mass of fleshy matter round it.

CHAPTER XXXII.

ESCALLONEÆ *R. Brown.*

Essential Character.—Calyx superior, five-toothed. Corolla of five petals, alternating with the calycine segments, from within which they rise, forming by their cohesion a tube, but finally separating from each other, imbricate in æstivation. Stamens arising from the calyx, alternating with the petals; anthers bursting lengthwise. Disk conical, epigynous, plaited, surrounding the base of the style. Ovarium inferior, two-celled, with two large polyspermous placentas in the axis. Style simple. Stigma two-lobed. Fruit capsular, two-celled, crowned by the style and calyx, which are permanent, splitting by the separation of the cells at their base. Seeds numerous, minute, with a transparent membranous integument. Embryo minute, in the apex of an oily albumen, having the radicle pointing to the extremity opposite the hilum. (*G. Don.*)

Description, &c.—The plants contained in this order are trees or shrubs with simple leaves, which are usually full of resinous glands. The plants are not generally very ornamental, except those which are contained in the genus *Escallonia*, most of the species of which are nearly hardy, being all natives of the mountains of South America.

GENUS I.

ESCALLONIA *Mutis.* THE ESCALLONIA.

Lin. Syst. PENTANDRIA MONOGYNIA.

Generic Character.—Limb of the calyx five-toothed or five-lobed. Stigma peltate, two-lobed. Capsule baccate, somewhat two-celled, opening by pores at the base. Seeds scrobiculate. (*G. Don.*)

Description, &c.—This genus is named in honour of Escallon, a Spanish traveller in South America, who found the first species of the genus, and sent it to Europe. The species are all trees and shrubs, natives of South America, most of which will stand out in the open air in the neighbourhood of London, if they have only a very slight protection during winter. The leaves of all the species are full of resinous glands. Only one species is properly a greenhouse plant, the others being very nearly hardy.

1.—ESCALLONIA ORGANENSIS *Gard.* THE ORGAN MOUNTAINS ESCALLONIA.

Engravings.—Bot. Mag., t. 4274; and our *fig.* 1, in Pl. 34.

Specific Character.—Smooth. Branches erect. Leaves oblong, obtuse and somewhat wedge-shaped at the point, and tapering at the base into a short petiole, serrated in the upper part, and full of resinous dots. Panicle terminal, many-flowered. Lobes of the calyx subulate. Petals spatulate.

Description, &c.—This very beautiful plant was discovered on the Organ Mountains of Brazil, almost simultaneously by Mr. Gardner and Mr. William Lobb, and it was introduced in 1846. It is a free-growing shrub, rising to the height of from two to four feet, and producing its beautiful rose-coloured flowers nearly all the summer.

OTHER SPECIES OF ESCALLONIA.

There are four other species of Escallonia to be met with in British gardens, viz. *E. rubra*, *E. Montevidensis*, *E. illinita* and *E. pulverulenta;* all of which are very ornamental, but as they will live in the open air in the neighbourhood of London, and as they form very large shrubs, they can hardly be considered as greenhouse plants. They are all natives of South America.

CHAPTER XXXIII.

CAPRIFOLIACEÆ *Richard.*

Essential Character.—Calyx superior, four or five-cleft, usually with bracts at the base. Corolla superior. Stamens epipetalous, equal in number to the lobes of the corolla and alternate with them. Ovary with from one to five cells, generally many-seeded. Style one. Stigmas three or five. Fruit indehiscent, crowned by the persistent lobes of the calyx. Seeds either solitary and pendulous, or numerous and attached to the axis. Testa often bony. Embryo very small, in fleshy albumen.

Description, &c.—Most of the genera included in this order contain only hardy plants.

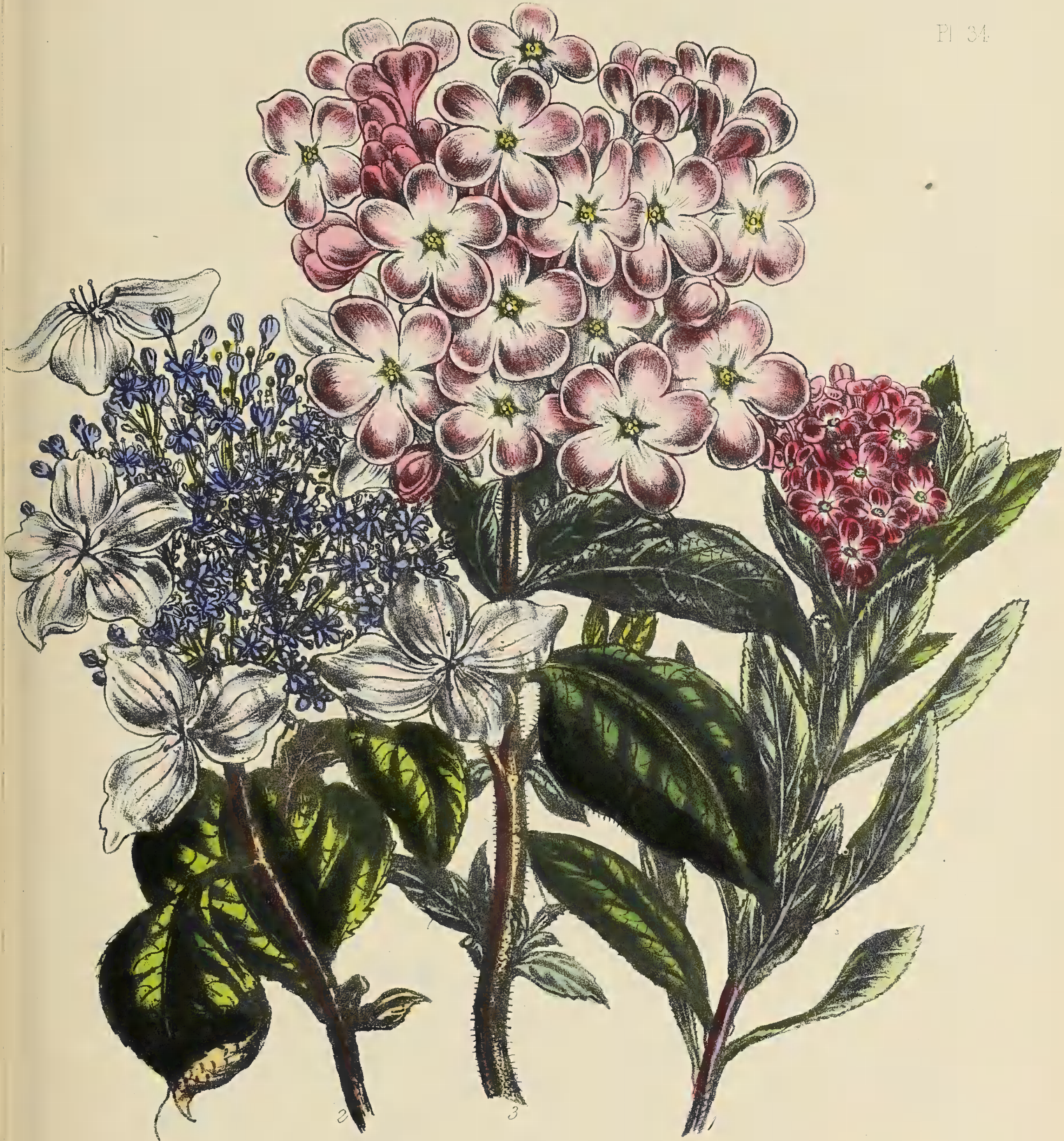
GENUS I.

ABELIA *Dec.* THE ABELIA.

Lin. Syst. DIDYNAMIA ANGIOSPERMIA.

Generic Character.—Tube of the calyx oblong; limb two or five-parted, leafy, segments oblong. Corolla tubulously funnel-shaped, five-lobed; lobes ovate, nearly equal. Stamens four, didynamous or nearly equal. Stigma capitate. Ovarium three-celled; cells containing three seeds, only one of which is fertile. Pericarpium one-seeded, indehiscent, crowned by the persistent leaves of the calyx.

Description, &c.—Some of the plants belonging to this genus are natives of China and the north of India;



1 Escallonia Organensis. 2 Hydrangea japonica var: cærulea. 3 Luculia gratissima.

but lately three species have been found in Mexico. By far the most beautiful of these is *Abelia floribunda*, which was introduced in 1847, and which has bright crimson flowers shaped like those of the honeysuckle, but produced singly. *Abelia rupestris* is another species of the same genus, a native of China, which was introduced by Mr. Fortune, in 1844.

CHAPTER XXXIV.

SAXIFRAGACEÆ *Dec.*

Essential Character.—Calyx of four or five sepals, which cohere more or less at their base. Petals five, inserted between the lobes of the calyx, sometimes wanting. Stamens five or ten; anthers two-celled, bursting lengthwise. Ovarium usually consisting of two or five carpels or follicles, cohering more or less on the inner side, but distinct at the apex. Stigmas sessile on the tip of the lobes of the ovarium. Fruit generally a membranous capsule, but sometimes a four-celled berry. Seeds numerous, very minute, usually with long hexagonal reticulations on the side of a transparent testa.

Description, &c.—The plants belonging to this order are very variable in habit, but the most ornamental are those included in the genus *Saxifraga*, which are nearly all hardy, and those contained in the genus *Hydrangea*.

GENUS I.

HYDRANGEA *Lin.* THE HYDRANGEA.

Lin. Syst. DECANDRIA TRIGYNIA.

Generic Character.—Flowers usually of two forms, only one of which is fertile and hermaphrodite. Calyx globose, ten-ribbed, rather truncate; limb five-toothed. Petals five. Stamens ten. Styles two, distinct. Capsule two-celled, with bent-in valves, dehiscing by a hole between the styles.

Description, &c.—The Hydrangeas are very handsome shrubs with large heads of flowers, which are generally white, though in the most common species they are pink. Many of the species are hardy, but some require a greenhouse. The name of *Hydrangea* is derived from two Greek words, signifying a cup of water, which has been explained by some botanists to allude to the capsule of the flower resembling a cup; while others suppose it has been given to the genus from the plants comprising it requiring a constant supply of water.

1.—HYDRANGEA HORTENSIA *Sieb.* THE COMMON HYDRANGEA.

Synonymes.—Hortensia opuloides *Lam.*; H. speciosa *Pers.*; Hydrangea hortensis *Smith*; Primula mutabilis *Lour.*; Viburnum serratum *Thunb.*

Engraving.—Bot. Mag., t. 438.

Specific Character.—Leaves broadly ovate, serrated, acuminate. Flowers disposed in ample corymbs or cymes, all deformed, with four or five segments; segments obovate-roundish, quite entire. Fertile flowers very few, containing two or three styles. (*G. Don.*)

Description, &c.—This very ornamental plant is a native of China and Japan, whence it was introduced in 1790, not quite sixty years ago. The plant is called the Globe Flower by the Japanese. The Hydrangea is now so common, and generally so much admired, that it will probably appear strange to most lovers of gardens to know that by botanists all the flowers are considered deformed, and that only very few of them bear seed. The plant was introduced into England by Sir Joseph Banks; but it was previously known in France, where it was called *Hortensia* by Commerson, in honour of Madame Hortense Lapeaute, who was the wife of his friend M. Lapeaute, a French watchmaker. Commerson first called the plant Lapeautia, but M. Lapeaute objecting to this, as not showing the compliment to his wife with sufficient clearness, Commerson changed the name to Hortensia, by which appellation the plant is still popularly called in France. The culture of the common Hydrangea is remarkably easy; it should be grown in a rich soil, and have abundance of water. It is propagated by cuttings, which if taken off while the plant is in a growing state, take root immediately, and have been known to flower in a month. To keep the plant in a vigorous state in pots, none of the wood should be more than three years old; but there should be a succession of two years' old shoots kept up for producing flowers. The flowers are generally pink, but they may be turned to blue, by growing the plant in earth containing oxide of iron. This mineral is sometimes found in peat or bog-earth, and generally in yellow loam, such as is found on Hampstead Heath, at Stanmore on the Common, on Wimbledon Common, and in various other places in the neighbourhood of London. Similar soils are found in many parts of Great Britain, from Cornwall, where they are abundant, to Scotland.

2.—HYDRANGEA JAPONICA *Sieb.* THE JAPAN HYDRANGEA.

Variety.—H. j. cærulea *Hook.*

Engravings.—Bot. Reg. for 1844, t. 61. Of the variety, H. j. cærulea, Bot. Mag., t. 4253; Paxt. Mag. of Bot., vol. xii., p. 199; and our *fig.* 2, in Pl. 34.

Specific Character.—Leaves opposite, on short petioles, rotund or broadly cuneate at the base, sometimes tapering into the short thick footstalk, ovate-oblong, acuminate, sharply serrated, quite smooth. Cymes of flowers crowded; branches pubescent. Sterile blossoms about five, bearing from three to five large, petaloid, rhomboidal sepals, more or less toothed.

Description, &c.—There are two varieties of this very ornamental plant, one of which has the sterile flowers of a purplish pink, and the other has them of a dark blue. Both form shrubs from three to four feet high, and both are natives of Japan, where they are found wild on the mountains of Nipon. Both kinds appear to have been introduced at the same time, viz. about 1844. In the "Botanical Magazine" it is suggested that the two kinds may be originally the same, and that the change of colour may depend only on change of soil as in the common Hydrangea; but this does not appear to be the case, as both kinds are so common in Japan that they have received different names.

A plant under the name of *Hydrangea Azisai* has been exhibited, but it is stated in "Paxton's Magazine" that it is in every respect similar to the blue-flowered variety of *H. japonica.*

CHAPTER XXXV.

RUBIACEÆ *Juss.*

Essential Character.—Tube of calyx adhering to the ovarium; limb variable. Corolla gamopetalous, inserted in the upper part of the tube of the calyx, usually with a four to five-lobed limb; the lobes or segments twisted or valvate in æstivation. Stamens equal in number to the segments of the corolla, alternating with them, and more or less adnate to its tube. Anthers oval, two-celled, bursting inwardly. Ovarium situated within the calyx, and adhering to it, crowned by a fleshy urceolus; stigmas usually two. Fruit variable. Albumen large, horny or fleshy. Embryo straight or a little curved, inclosed in the middle of the albumen, with a terete radicle turned towards the hilum, and leafy cotyledons.

Description, &c.—The plants belonging to this very extensive order are generally aromatic and have very ornamental flowers. The Coffee-tree, the Cinchona or Peruvian Bark, and the Ipecacuanha, all belong to this order, together with many of our most beautiful and fragrant greenhouse and stove plants.

GENUS I.

LUCULIA *Sweet.* THE LUCULIA.

Lin. Syst. PENTANDRIA MONOGYNIA.

Generic Character.—Calyx five-toothed, deciduous; lobes foliaceous. Corolla with a longish tube, and a five-lobed expanded limb, which is imbricate in æstivation. Stamens almost inclosed; anthers linear. Stigma two-parted. Capsule dehiscing at the dissepiment from the apex. Wings of seed jagged. (*G. Don.*)

Description, &c.—This genus is a very small one, and at present only two species have been discovered. *Luculia* is only slightly changed from the name given to *L. gratissima* by the Nepalese.

1.—LUCULIA GRATISSIMA *Sweet.* THE FRAGRANT LUCULIA.

Synonymes.—Cinchona gratissima *Wall.*; Mussænda Luculia *Hamilton.*

Engravings.—Sweet's Brit. Flow. Gard., t. 145; Bot. Mag., t. 3946; The Botanist, t. 41; and our *fig.* 3, in Pl. 34.

Specific Character.—Leaves elliptical, acuminate, many-nerved, glabrous above, hairy on the nerves beneath. Sepals linear, somewhat obtuse. Tube of the corolla twice as long as the limb, which is without tubercles.

Description, &c.—This very ornamental plant is said to form in its native country a tree from sixteen to twenty feet high; but in England, even when planted in the free ground of a conservatory, it does not exceed the height of nine feet. The flowers are not only exceedingly beautiful, and most delightfully fragrant, but they are very valuable from being produced in the winter season, when so few ornamental plants are in flower. The species is a native of Nepal, growing on hills in exposed situations, and flowering nearly all the year. It was introduced in 1823, but till lately it was found difficult to cultivate it, as it was generally grown in a stove, the atmosphere of which was too hot and close for it, while a common greenhouse was found too cold and damp. A medium has now been found, by growing the plant in a conservatory which is heated so as to preserve a regular temperature during the autumn and winter, and admitting air whenever it could be done without chilling the house. The soil in which it grows should be a mixture of loam and leaf-mould, and no "other peculiar management is required except daily syringing during its growth, to destroy the red spider, to whose attacks it is extremely liable."

OTHER SPECIES OF LUCULIA.

LUCULIA PINCIANA *Hook.*

This is a most splendid plant, closely resembling *L. gratissima*, excepting in the leaves, which are somewhat broader, shorter, and more closely veined, and in the flowers, which are white, and each furnished with five pairs of prominent tubercles or nectaries, which are very conspicuous on the limb of the corolla. The flowers form a large cyme, sometimes a foot or more in diameter. When they first expand they are of a pure white, but they soon change to a rich cream-colour, slightly tinged with pink. The outside of the flower is somewhat more deeply tinged, and the tube is a deep rose-colour. The flowers, like those of *L. gratissima,* have a most delicious fragrance. The species is a native of Nepal, whence it was introduced in 1844.

GENUS II.

BOUVARDIA *Salisb.* THE BOUVARDIA.

Lin. Syst. TETRANDRIA MONOGYNIA.

Generic Character.—Limb of calyx four-parted. Corolla funnel-shaped, tubular, with a four-parted, spreading, short limb. Stamens adnate to the base of the tube, but free above the middle. Anthers linear, inclosed. Capsule membranous, globose, compressed. Seeds girded by a membranous border. (*G. Don.*)

Description, &c.—This is a genus of Mexican shrubs, with very ornamental flowers. The genus was named in honour of Dr. Charles Bouvard, formerly superintendent of the Jardin des Plantes in Paris.

1.—BOUVARDIA TRIPHYLLA *Salisb.* THE THREE-LEAVED BOUVARDIA.

Synonymes.—B. Jacquini *Hum. Bonpl. et Kunth*; Ixora americana *Jacq.*; I. ternifolia *Cav.*; Houstonia coccinea *Andr.*; Hedyotis fruticosa *Moç. et Sesse*; Tlacoxochilt jasminiflora *Hern.*

Engravings.—Bot. Mag., t. 1854; Bot. Reg., t. 107; Bot. Rep., t. 106; and our *fig.* 1, in Pl. 35. Of the variety *splendens*, Bot. Mag., t. 3781; and Bot. Reg. for 1840, t. 37.

Specific Character.—Branchlets trigonal, hairy. Leaves smooth above, hairy beneath, three in a whorl, oblong. Corymbs somewhat trichotomous; lobes of calyx five times shorter than the tube of the corolla, which is hairy.

Description, &c.—This species, like many other Mexican plants, was injured when it was first introduced by being kept too warm; but it is now found that it is in reality half-hardy, and that it will grow freely in the open ground if planted in May and taken up again in October. The plants should be kept tolerably dry during the winter, and fresh potted about the end of February, when they will soon begin to grow, and may be either kept in the pots till they flower, or planted out in May. It is difficult to propagate this species in the ordinary way by cuttings; but it is observed in the "Botanical Register," that "it is very easily increased by the roots from the young shoots. In the spring, before the plant begins to grow, the roots should be cut into pieces about two-and-a-half or three inches long, both large and small, and inserted in pots filled with any light sandy soil, leaving but a small portion of the root above the surface. If then placed upon a moderate hotbed, they will soon begin to grow, and will make good plants by the end of May." The species is a native of Mexico, whence it was introduced by Sir Joseph Banks in 1794.

2.—BOUVARDIA VERSICOLOR *Ker.* THE TRUMPET-FLOWERED BOUVARDIA.

Synonyme.—Houstonia alba *Hort.*

Engravings.—Bot. Reg., t. 245; and our *fig.* 2, in Pl. 35.

Specific Character.—Leaves opposite. Corolla clavate-tubular; tube glabrous both within and without.

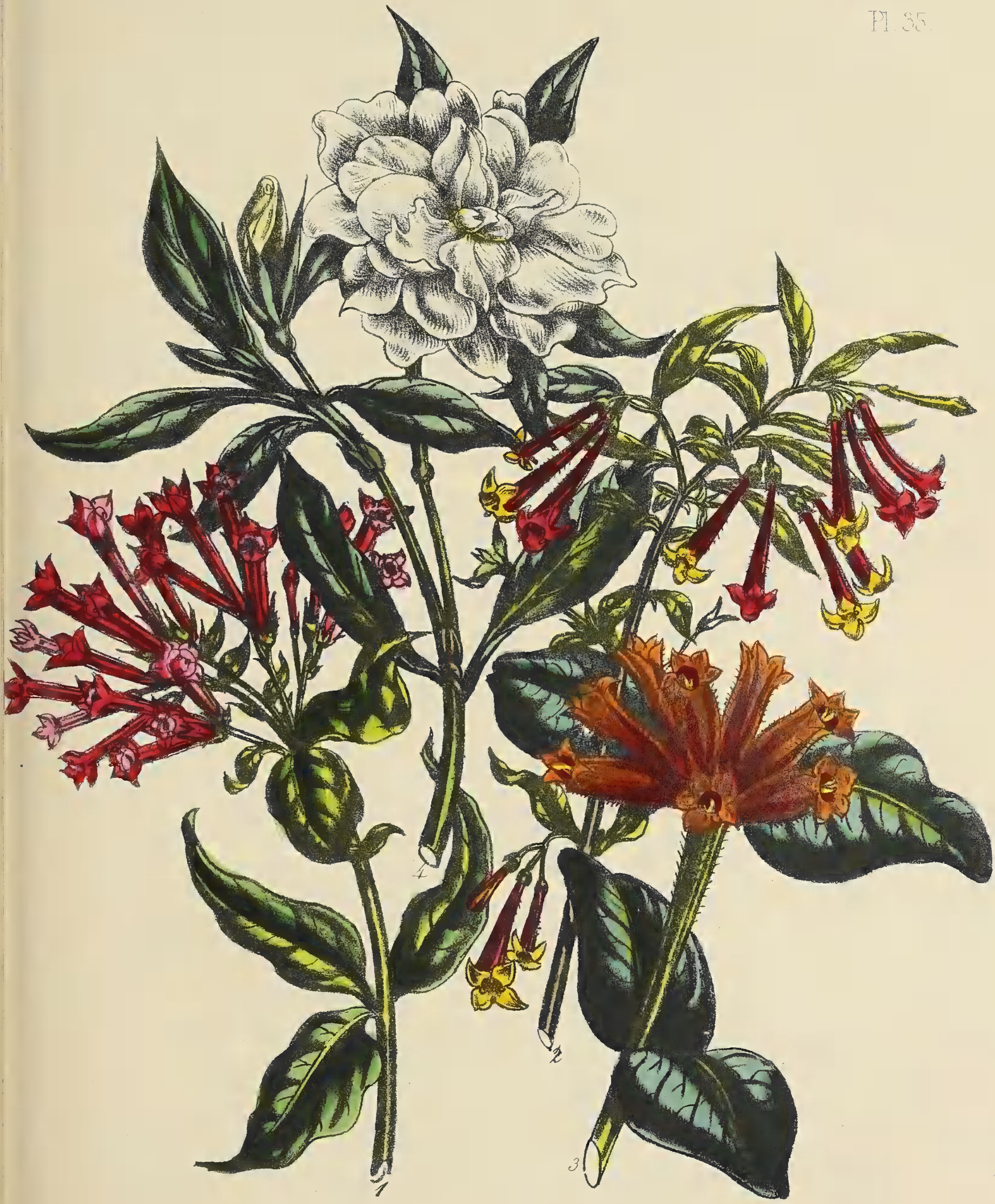
Description, &c.—This very pretty little plant is a native of South America, whence it was introduced in 1814. It differs from *B. triphylla* in having the leaves in pairs instead of being three together, and in the flowers being red on the outside of the tube and yellow within. The flowers are entirely without fragrance. The species is a small shrub, apparently somewhat less hardy than *B. triphylla*, as it requires to be kept in the greenhouse all the year.

OTHER SPECIES OF BOUVARDIA.

BOUVARDIA FLAVA *Decaisne.*

A graceful little plant, growing about three feet high, with bright yellow flowers, which "droop gracefully from their slender purple footstalks." It is a native of Mexico, whence it was introduced in 1845. It appears to be

Pl. 35.



1 Bouvardia triphylla: 2: Bouvardia versicolor. 3. Burchellia capensis. 4 Gardenia radicans

quite as hardy as *B. triphylla*, and flowers best when planted out in the open ground early in spring; but "in order to make it bloom abundantly, it should be cut back when it is repotted."

GENUS III.

BURCHELLIA *R. Br.* THE BURCHELLIA.

Lin. Syst. PENTANDRIA MONOGYNIA.

Generic Character.—Limb of the calyx drawn out beyond the ovarium, five-cleft beyond the middle. Corolla clavately funnel-shaped; throat naked; lobes imbricated, and twisted in æstivation. Filaments adnate to the tube at the base; anthers inclosed. Stigma bearing five convex crests on the outside, and tufts of hairs. Berry crowned by the calyx, turbinately globose. Placentas adnate to the dissepiment. Seeds angular. Flowers capitate. (*G. Don.*)

Description, &c.—Only two species of this genus have as yet been discovered, and both are shrubs, natives of the Cape of Good Hope, with scarlet flowers disposed in heads at the top of the branches. The name of *Burchellia* was given to the genus in honour of Mr. Burchell, who collected many thousand plants during his travels in South Africa and South America.

1.—BURCHELLIA CAPENSIS *R. Br.* THE CAPE BURCHELLIA.

Synonymes.—B. bubalina *Sims*; Lonicera bubalina *Lin.*; Cephælis bubalina *Pers.*; Buffelhorn *Dutch.*

Engravings.—Bot. Mag., t. 2339; Bot. Reg., t. 466; and our *fig.* 3, in Pl. 35.

Specific Character.—Leaves ovate, acute, clothed with hispid pubescence. Stipules very broad and very short, cuspidate at the apex. Anthers adnate to the upper part of the tube of the corolla. (*G. Don.*)

Description, &c.—This species forms a large shrub at the Cape of Good Hope, where it has received its name of Buffel or Buffalo-Horn from the hardness of its wood. When it was first introduced it was supposed to be a kind of Honeysuckle, and was placed in that genus by the younger Linnæus. As, however, it was found on further examination not fully to accord with that or any other known genus, it received its present name. It requires to be kept in a warm greenhouse all the year, and it should be grown in rich light soil. The flowers are very ornamental, and their beauty is increased by having two large leaves close below them, which serve as a back ground. The species was introduced in 1818.

OTHER SPECIES OF BURCHELLIA.

BURCHELLIA PARVIFLORA *Lindl.*

This species differs from *B. capensis* not only in the comparatively small size of its flowers, but in its different shaped leaves. The flowers also form a much more compact head, and they are of a paler and less brilliant colour. The species is a native of the Cape of Good Hope, whence it was introduced in 1824.

GENUS IV.

GARDENIA *Ellis.* THE CAPE JASMINE.

Lin. Syst. PENTANDRIA MONOGYNIA.

Generic Character.—Limb of the calyx truncate or toothed. Corolla funnel or salver-shaped, having the tube much longer than the calyx; limb twisted in æstivation, from five to nine-parted, spreading. Anthers from five to nine, linear, nearly sessile in the throat. Stigma clavate, bifid. Berry fleshy, crowned by the calyx, incompletely from two to five-celled. Seeds minute, immersed in the fleshy parietal placentas. (*G. Don.*)

Description, &c.—Most of the plants belonging to this genus are natives of the Tropics, and, consequently, require a stove in Great Britain. Some few, however, only require a greenhouse, and these are not only ornamental in their flowers, but remarkable for their delightful fragrance. The genus is named in honour of Dr. Garden of Charlestown, Carolina, one of the correspondents of Linnæus.

1.—GARDENIA FLORIDA *Lin.* THE COMMON CAPE JASMINE.

Synonymes.—G. jasminoides *Sol.*; Jasminum capense *Mill.*
Variety.—G. f. *var.* Fortuniana *Lindl.*
Engraving.—Bot. Reg., t. 449.

Specific Character.—Shrubby, unarmed. Leaves ovate, attenuated at both ends. Berries elongated, turbinate, ribbed. Segments of the calyx linear, elongated.

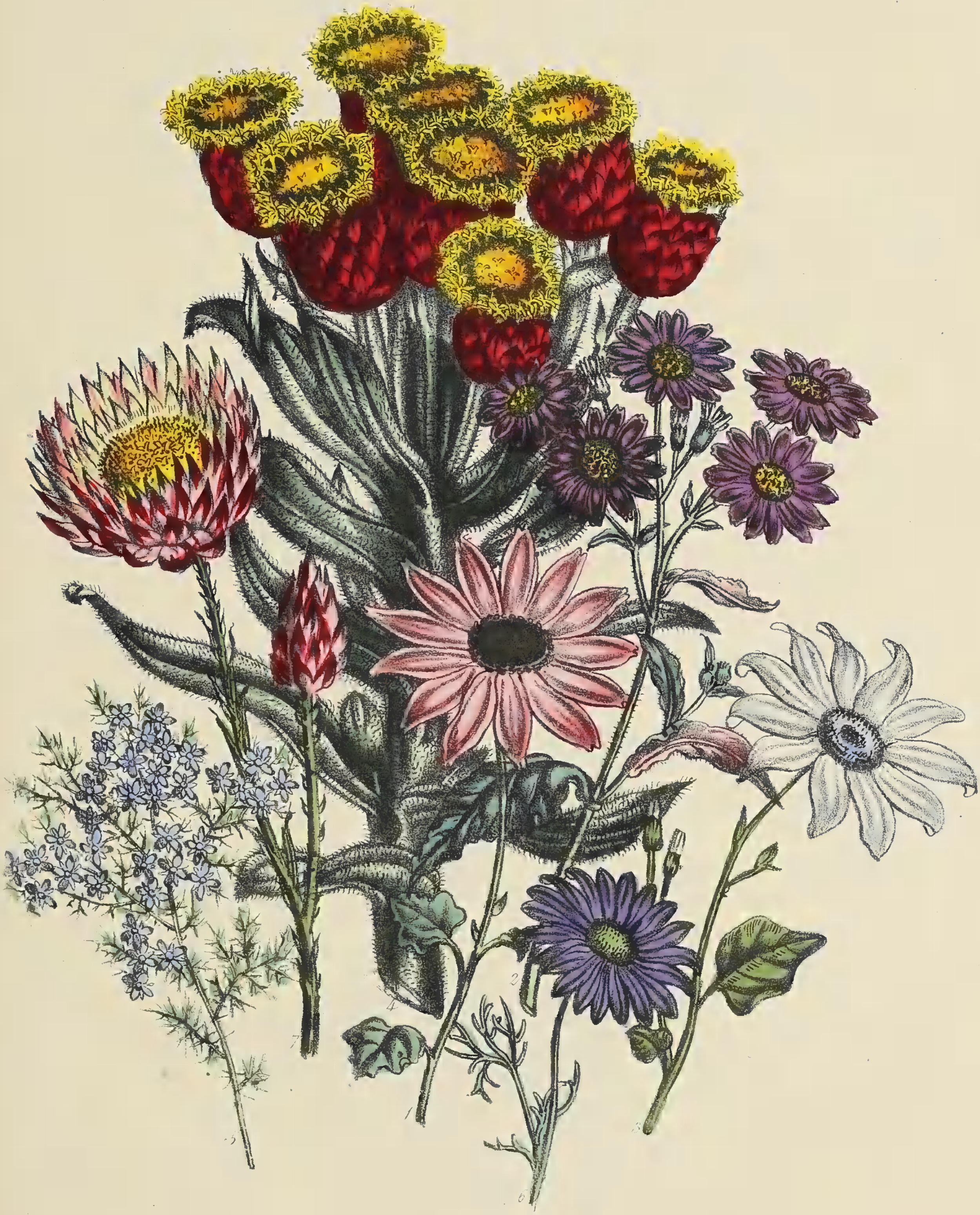
Description, &c.—It is a singular fact that though this plant is generally called the Cape Jasmine, it is not a native of the Cape of Good Hope, but of China and Japan. In the year 1754 Captain Hutchinson, of the Godolphin Indiaman, met with a bush of this plant growing in a garden at the Cape of Good Hope, and he was so much struck with its beauty, that he brought the whole of it in a pot to England, where he gave it to a friend of his named Warner, of Woodford Row, Essex, who was a great cultivator of exotics. This gentleman permitted Mr. Gordon, a nurseryman at Mile End, to take layers from the plant, and it was so much admired that he is said to have made five hundred pounds by it; a large sum in those days, when the taste for gardening was much less common than at the present. It is now common in gardens, where it requires the usual treatment of greenhouse plants, though when it is wished for it to blossom in early spring, it must be put for a short time into a hotbed or a stove. The plant first introduced was double flowered, and the single state of the species was not brought to England till 1820. The flowers, which are of a beautiful cream colour when in perfection, turn buff as they fade; and the berries, which are full of an orange-coloured pulp, are used as a dye in China and Japan. The variety has double flowers, and is very beautiful, resembling a large white Camellia.

2.—GARDENIA RADICANS *Thunb.* THE DWARF CAPE JASMINE.

Synonyme.—G. florida var. *Wall.*
Engravings.—Bot. Mag., t. 1842; Bot. Reg., t. 73; Bot. Rep., t. 491; and our *fig.* 4, in Pl. 35.

Specific Character.—Unarmed. Leaves lanceolate. Corolla salver-shaped, obtuse. Calyx angular. Stem rooting.

Description, &c.—Only the double-flowered variety of this species is known in England, and, as is observed in the "Bot. Reg.," "it is difficult to say in what respect it differs from the double-flowered variety of the common Cape Jasmine, except in size." The difference in that respect, however, is very great; for the common Cape Jasmine, under favourable circumstances, often becomes six or seven feet high, while *G. radicans* rarely exceeds the height of one foot. The flowers are of nearly the same size, and if anything they are rather larger in the smallest plant *G. radicans* is, however, always distinguishable from *G. florida* by its habit of throwing out roots from the stem above ground; but this is only the case when the plant has been kept for some time in a warm damp situation. The plant should be kept from the autumn till about March in the greenhouse, and then plunged into a hotbed to throw it into flower, after which it may be returned to the greenhouse, or kept in a room at pleasure. The species is a native of China, whence it was sent home in 1804. It is propagated by cuttings, which will flower as soon as they have taken root. Dr. Wallich and Dr. Lindley both think this plant only a variety of *G. florida*.



1 Cineraria lanata 2 Cineraria cruenta. 3. Cineraria populifolia var. 4. Astelma eximium.
5. Triptilion spinosum. 6. Brachycome iberidifolia 7. Helichrysum sesamoides.

OTHER SPECIES OF GARDENIA.

G. THUNBERGIA *Lin.*

This is a very handsome species, with large, white, fragrant flowers, and shining leaves. It is said to be a native of the Cape of Good Hope, whence it was introduced in 1773. It is propagated by cuttings, but the young plants will not blossom till they are of a considerable size. It is easily distinguished from the other species by the limb of the calyx being tubular, and only open on one side.

G. ROTHMANNIA *Lin.*

A very handsome species, with a tree-like stem and a campanulate flower, which is white, spotted with dark red on the inside, and very sweet-scented. It is a native of the Cape of Good Hope, whence it was introduced in 1774.

G. AMŒNA *Sims.*

This species is a native of China, whence it was introduced in 1823. The flowers are white, tipped with crimson, and very ornamental, and the stems are spiny.

CHAPTER XXXVI.

COMPOSITÆ.

Essential Character.—Leaves without stipules, usually simple, but frequently much divided. Florets collected in dense heads upon a common receptacle surrounded by an involucre. Bracts, when present, stationed at the base of the florets, and called the paleæ of the receptacle. Calyx superior, closely adhering to the ovary, and undistinguishable from it; its limb either wanting or membranous, divided into bristles, paleæ, hairs, or feathers, and called pappus. Corolla monopetalous, superior, usually deciduous, either ligulate or funnel-shaped; in the latter case four or five-toothed, with a valvate æstivation. Stamens equal in number to the teeth of the corolla, and alternate with them; the anthers cohering into a cylinder. Ovary inferior, one-celled, with a single erect ovule. Style simple; stigmas three. Fruit a small, indehiscent, dry pericarp, crowned by the limb of the calyx. Seeds solitary, erect. Embryo with a taper inferior radicle. Albumen none.

Description, &c.—This is a very large order, but as most of the plants contained in it are natives of the temperate zones, there are but few greenhouse plants. In New Holland, especially, there are very few Compositæ. The order takes its name from each flower being composed of numerous florets.

GENUS I.

CINERARIA *Lin.* THE CINERARIA.

Lin. Syst. SYNGENESIA POLYGAMIA SUPERFLUA.

Generic Character.—Involucre deeply many-parted; segments equal. Receptacle naked. Florets of the disk tubular, hermaphrodite; those of the ray ligulate, feminine. Anthers naked at the base. Pappus hairy, sessile.

Description, &c.—Many of the species of the old genus Cineraria are included by modern botanists in the genus *Senecio*. Some of them are hardy plants, not remarkable for their beauty; but others are among the most ornamental greenhouse plants we have. All these plants are either natives of the Canary Islands and Madeira, or hybrids raised in this country; and I have included them all in the genus *Cineraria* (which signifies ashes, and alludes to the whiteness on the underside of the leaves of some of the species), as they are generally known by that name in nurseries. There are some greenhouse species natives of the Cape of Good Hope, but they are now seldom grown.

1.—CINERARIA LANATA *Sims.* THE WOOLLY CINERARIA.

Engravings.—Bot. Mag., t. 53; and our *fig.* 1, in Pl. 36.

Specific Character.—Stem suffruticose. Leaves somewhat five-lobed, woolly beneath. Petioles and peduncles woolly.

Description, &c.—This is a very handsome plant, which was introduced in 1770, and it is consequently one of the oldest species of the genus in British greenhouses. It is said in the "Botanical Magazine" to be a native of Africa, probably because some greenhouse species of the genus were natives of the Cape of Good Hope, but in the "Hortus Britannicus" it is rightly stated to be a native of the Canary Islands. This species is easily distinguished by the whiteness on the underside of its leaves, and by the white centre of its flowers; and these peculiarities are found in all the numerous hybrids that have been raised from it. Perhaps the most ornamental of these is the hybrid called "The King." The great objection to *C. lanata* is, that it is frequently attacked by a species of *Aphis*, from whose ravages it is very difficult to protect it.

2.—CINERARIA CRUENTA *Mass.* THE PURPLE-LEAVED CINERARIA.

Synonymes.—C. aurita *Andr.*; Senecio cruentus *Dec.*

Engravings—Bot. Mag., t. 406; Bot. Rep., t. 24; and our *fig.* 2, in Pl. 36.

Specific Character.—Flowers cymose. Leaves cordate, angular, purple beneath; petioles of the leaves ear-shaped at the base.

Description, &c.—This species is a native of the Canary Islands, whence it was introduced in 1777. It differs from *C. lanata* not only in its flowers, but in being herbaceous instead of shrubby, and in its leaves being tinged with pink or purple on the underside, instead of being woolly. This has also been the parent of numerous varieties, and, as it ripens seeds freely, it is generally preferred to all other kinds when it is wished to raise hybrids. "The seed," Paxton says, "should be sown as soon as it is ripe in good-sized pots of light rich mould, and placed in a gentle heating hotbed, where they will soon vegetate; when the plants have made two or three leaves, they should be transplanted into small sixties, using the same light rich compost as before recommended, and replaced in the frame; in a short time they will require a larger-sized pot, which should be immediately given, and so on until they reach the size of thirty-two, in which they may be allowed to flower. Towards the middle or latter end of October, if they have had proper attention, such as water, air, pot-room, &c., they will commence throwing up strong flower-stalks from the centre, when they should be placed in a light part of the greenhouse, where they will begin flowering in December, and continue beautiful for several months." When it is wished to preserve the plants more than one season, they "should be cut down after flowering, and placed at the back of a greenhouse or pit, where they should have but little water. Some time in August their roots should be divided and potted, treating them as before recommended for seedlings."

3.—CINERARIA POPULIFOLIA *L'Herit.* THE POPLAR-LEAVED CINERARIA.

Synonymes.—Senecio populifolius *Dec.*; Cacalia appendiculata *Poir.*

Variety.—C. p. cyanophthalma; *syn.* Senecio Heritieri *var.* cyanophthalmus *Hook.*

Engravings.—The Botanist, t. 215. Of the variety, Bot. Mag., t. 3827; and our *fig.* 3, in Pl. 36.

Specific Character.—Shrubby. Leaves petiolate, cordate, toothed; the upper part smooth when old; the lower part and the branches tomentose. Flowers in small corymbs. Pedicels slender, bracteate. Involucre in from twelve to fifteen scales. Florets of the ray ten or twelve.

Description, &c.—In "The Botanist" it is suggested that *C. populifolia* may be a hybrid or a variety of *C. lanata*; and, in the "Botanical Magazine," Sir W. J. Hooker supposes that the variety is also a hybrid from

C. lanata. Both plants are extremely ornamental and highly deserving of culture, as the flowers are not only extremely beautiful, but delightfully fragrant. The flowers of the variety are particularly interesting, from the colour of the blossoms being extremely rare in any species of Compositæ, the flowers in that order which have a white ray, having, generally, a yellow disk. Indeed, Sir W. J. Hooker observes, that he "never before met with any having a white ray and a blue disk." This very beautiful variety was raised by Mr. Morrison, gardener at Rosemount, near Belfast, in 1839. It is probable that the beautiful blue hybrid Cinerarias which are now so common in gardens have been raised from the seeds of this variety.

OTHER SPECIES OF CINERARIA.

C. TUSSILAGINIS *L'Herit.*

This is a handsome species, a native of Teneriffe, which was introduced in 1777, but having been soon lost, it was not again introduced till 1832. The beautiful *C. Waterhousiana* is said to be a hybrid between this species and *C. cruenta.*

C. AURITA *L'Herit.*

This species was introduced in 1777, and its flowers are rather more of a bluish purple than those of most of the other species.

Many other species might be named, but those which have been above described, with their hybrids and varieties, are the kinds most generally found in greenhouses in Great Britain. It may be observed that many of the kinds are cross breeds, that is, raised from two hybrids, and these generally are much more beautiful than those which are raised from two species. It must also be observed that all the species and varieties above described are placed by modern botanists in the genus *Senecio,* and that the few species which are left in the old genus *Cineraria,* or Cape Aster, have rather small weedy-looking flowers, and are scarcely worth cultivating, particularly as, being all natives of the Cape of Good Hope, they require a greenhouse in the climate of Great Britain.

GENUS II.

HELICHRYSUM *Dec.* THE HELICHRYSUM.

Lin. Syst. SYNGENESIA POLYGAMIA SUPERFLUA.

Generic Character.—Flower head composed of numerous florets, all of which are tubular, hermaphrodite, and five-toothed. Involucre imbricate; scales scariose, the interior ones sometimes connivent, sometimes radiating. Receptacle flat, without paleæ, either quite naked or with alveolæ or little hairs. Achænium not beaked, sessile, with the point of attachment terminal. Hairs of the pappus in one row, rough but not feathered, sometimes free, sometimes connected equally at the base, or unequally joined or branched.

Description, &c.—Perhaps few kinds of plants have been more confused than those in this genus and its allied genera, all of which are known by the popular English name of Everlasting, from the great length of time which their flowers remain uninjured after they are cut. Thus we find the plants now included in this genus distinguished in the works of the old botanists under the various names of *Gnaphalium, Astelma, Xeranthemum,* and *Elichrysum,* besides various other names which have been given to particular species by botanists who have wished to make these species into genera, but whose generic names have not been adopted by any botanical writers but themselves. In addition to these, De Candolle has made a new genus, called *Aphelexis,* out of some of the species of *Helichrysum,* and several other genera out of the old genus *Gnaphalium.* To avoid confusion, however, I shall include all I have to say of this tribe of plants under the general name of *Helichrysum*. The word *Helichrysum* is now generally said to be derived from *helios*, the sun, and *chrysos*, gold, though various other interpretations of the name have been given, and which have led to the different ways which have been adopted in spelling it. As the species are very numerous, it will be impossible in my present limits to describe more than two or three of the most ornamental.

1.—HELICHRYSUM SQUAMOSUM *Dec.* THE SCALY HELICHRYSUM.

Synonymes.—Elichrysum splendens *Sims*; Xeranthemum herbaceum *Andr.*

Engravings.—Bot. Mag., t. 1773; Bot. Rep., t. 487.

Specific Character.—Stem fruticose, much branched. Branches one-flowered. Leaves lanceolate, revolute at the margin. Scales of the involucrum shining.

Description, &c.—This plant, though now seldom seen in collections, is well deserving of cultivation, from the brilliancy of its golden yellow flowers, which have rich brown shining scales on the involucrum, and which are produced in very great abundance. The plants are compact in growth, and very bushy, so that they are ornamental even without their flowers. The leaves are white on the under side, and give the plant a silvery appearance from their being curled up at the margin. The whole plant, particularly the flower, has a brilliant and almost dazzling appearance, which the flowers retain after they are cut. The species is a native of the Cape of Good Hope, whence it was introduced in 1802.

2.—HELICHRYSUM SESAMOIDES *Willd.* THE SUPERB HELICHRYSUM.

Synonymes.—Xeranthemum sesamoides *Lin.*; Helipterum sesamoides *Dec.*; Aphelexis sesamoides *D. Don.*

Engravings.—Bot. Mag., t. 425; and our *fig.* 7, in Pl. 36.

Specific Character.—Stem shrubby, branched. Branches one-flowered. Leaves linear, imbricate.

Description, &c.—This is one of the most splendid species of the genus, and it has been common in British greenhouses for upwards of fifty years, having been introduced in 1795. It is a native of the Cape of Good Hope, flowering in May and June, and it is easily propagated by cuttings.

3.—HELICHRYSUM EXIMIUM *Willd.* THE GIANT HELICHRYSUM.

Synonymes.—H. africanum *Edwards*; Astelma eximium *Brown*; Gnaphalium eximium *Lin.*; Helipterum eximium *Dec.*

Specific Character.—Leaves lanceolate, entire, tomentose, decurrent. Heads of flowers congested.

Engravings.—Bot. Mag., t. 300; Bot. Reg., t. 532; Bot. Rep., t. 654; Paxton's Mag. of Bot., vol. v., p. 103; and our *fig.* 4, in Pl. 36, under the name of *Astelma eximium.*

Description, &c.—This magnificent plant was introduced in 1793; but it was for many years neglected and very little known, till about ten years since, when it was flowered in the greenhouse at Chatsworth; and since which time it has been very generally cultivated. It should be grown in a well drained soil, composed of sand and heath mould, and no moisture should be suffered to rest on the leaves. This plant is very generally named Astelma in the nurseries.

OTHER SPECIES OF HELICHRYSUM.

H. ACUMINATUM *Dec.*

This is one of the Cape of Good Hope species, with white flowers, introduced in 1823.

GENUS III.

TRIPTILION *Ruiz et Pav.* THE TRIPTILION.

Lin. Syst. SYNGENESIA ÆQUALIS.

Generic Character.—Head five-flowered, homogamous. Involucre shorter than the flowers, and consisting of ten keeled leaflets, each terminated by a spine; the leaflets arranged in a double series, the outer ones spreading, the inner ones erect. Receptacle destitute of scales, but covered with short hairs. Corolla two-lipped, the outer lip broad and three-toothed, the inner lip two-cleft. Anthers furnished with a tail. Pappus feathery.

Description, &c.—This is a very small genus, of which only two species appear to have been introduced into British gardens, and only one of which is a greenhouse plant. The name of *Triptilion* alludes to the feathery pappus of the seed-vessels, which is very long, and generally consists of three stalks bordered by long feathery hairs.

1.—TRIPTILION SPINOSUM *Ruiz et Pav.* THE SPINY TRIPTILION.

Synonymes.—T. lanceolatum *Willd.*; Nassaubia spinosa *D. Don.*
Engravings.—Bot. Reg. for 1841, t. 22; The Botanist, t. 224; and our *fig.* 5, in Pl. 36.

Specific Character.—Stem herbaceous, much branched. Flowers produced in corymbs at the ends of the branches. Leaves pinnately lobed; lobes terminating in a spiny mucro.

Description, &c.—This plant is remarkably beautiful, notwithstanding the small size of its flowers, which are of a most intense and brilliant blue; though it is remarkable that they become white the moment they are immersed in warm water. This is the more remarkable, as dried specimens retain their colour for an indefinite period. The plant has tuberous roots, something like those of a Dahlia in miniature. As soon as the plant has flowered, the stems should be cut down, and the ball of earth having been reduced, the plant should be shifted to a smaller pot till spring, when it should be potted for flowering in a soil composed of sandy loam mixed with rotten leaves. The root-leaves, which are very pretty, spring up in autumn as soon as the flowering stems are cut off, but they die off as the flower stems grow up in summer. The plant has hitherto been only propagated by seeds.

GENUS IV.

BRACHYCOME *Cass.* THE SWAN RIVER DAISY.

Lin. Syst. SYNGENESIA POLYGAMIA SUPERFLUA.

Generic Character.—Head many-flowered, heterogamous. Flowers of the ray in one series, ligulate, feminine; those of the disk tubular and hermaphrodite. Involucre campanulate; scales in few rows, and membranous at the margins. Receptacle conical, slightly pitted. Anthers devoid of a tail. Pappus very short and resembling a bristly crown.

Description, &c.—This genus is nearly allied to the Daisy, and most of the plants contained in it are not worth cultivating. The name of *Brachycome* signifies short hair, in allusion to the shortness of the pappus.

1.—BRACHYCOME IBERIDIFOLIA *Benth.* THE LARGE SWAN DAISY.

Engravings.—Bot. Mag., t. 3876; Bot. Reg. for 1841, t. 9; The Botanist, t. 230; and our *fig.* 6, in Pl. 36.

Specific Character.—Stem erect, branched. Leaves pinnately cut, segments linear-subulate, distinct, entire. Peduncles naked, each bearing a single head of flowers. Involucre furnished with oblong scales somewhat pointed and membranous at the top. Florets of the ray, tubular. Limb smooth, five-toothed. Stamens five.

Description, &c.—When this beautiful little plant was first introduced, it was supposed to be a hardy annual, because it was found that when raised from seeds it would flower the first year in the open border. After a little time, however, it was discovered that it succeeded much better when treated as a greenhouse perennial, as when grown in the open border it would never flower well unless the weather was warm and dry, being easily injured by wet and very apt to damp off. This plant varies very much, and the flowers are of every shade of blue and lustrous lilac, with considerable diversity in the size and shape of the flower heads.

CHAPTER XXXVII.

CAMPANULACEÆ *A. Dec.*

Essential Character.—Calyx superior, usually five-lobed, persistent. Corolla monopetalous, regular, permanent, usually five-lobed, inserted in the top of the calyx. Stamens five, inserted in the calyx alternately with the lobes of the corolla. Anthers two-celled, distinct. Ovary inferior, with two or more polyspermous cells. Style simple, covered with collecting hairs. Stigma naked, simple, or with as many lobes as there are cells. Fruit dry, crowned by the withered calyx and corolla, always loculicidal. Seeds numerous, attached to a placenta in the axis.

Description, &c.—The plants belonging to this order are all either herbaceous or suffruticose, and they all abound with a somewhat acrid milky juice. The flowers are ornamental, but nine-tenths of them are blue. The order was formerly combined with *Lobeliaceæ*, but the two orders differ in their botanical construction, particularly in the very short filaments of the stamens of the *Campanulaceæ*, and in the style being furnished with collecting hairs, which appear intended to clear out the pollen from the cells of the anthers. These collecting hairs appear much longer when the flower is in the bud or just opened than they do afterwards when it has been long expanded, and as they finally disappear, it was supposed that they were deciduous, but it is now found they possess a curious retractile power like the tentacula, or horns of the snail, and that when they have performed their office of collecting the pollen, they are gradually drawn back into certain cavities lying at their base. Most of the genera included in this order contain only hardy plants.

GENUS I.

CANARINA *Juss.* THE CANARINA.

Lin. Syst. HEXANDRIA MONOGYNIA.

Generic Character.—Calyx and corolla six-lobed. Stamens six. Stigmas six. Cells of the fruit opposite the stamens and calycine segments. (*G. Don.*)

Description, &c.—There are only two species in this genus, and one of them is a stove-plant. The greenhouse Canarina was formerly included in the genus *Campanula*, and when it was separated on account of the difference in the number of stamens and some other particulars, the new genus was called Canarina, from this plant being a native of the Canary Islands.

1.—CANARINA CAMPANULATA *Lam.* THE CAMPANULATE CANARINA.

Synonymes.—C. lævigata *G. Don*; Campanula canariensis *Lin.*

Engravings.—Bot. Mag., t. 444; Lodd. Bot. Cab., t. 376.

Specific Character.—Plant glaucescent. Root tuberous, fusiform. Stems ascending. Leaves hastately subcordate, irregularly toothed. Flowers solitary, terminating axillary branchlets. (*G. Don.*)

Description, &c.—A large herbaceous plant with thick fleshy roots, and drooping ornamental flowers, which are remarkable for their colour, as they are orange veined with red, a colour which is never seen in any of the other Campanulaceæ. The species is valuable for flowering in autumn and winter, and continuing till about March, a season when so few other greenhouse plants are in flower. After flowering, the stem dies down, and the root continues dormant all the summer, when it needs but very little water. In October the stem generally begins to push forth, and most gardeners at this season, if convenient, either plunge the pot in a hotbed or place it in a stove in order to make it produce abundance of flower-buds. It must, however, be brought back to the greenhouse as soon as the buds are formed. The stem grows five or six feet high. The plant is propagated by dividing the roots, which must be done very carefully, as they are very fleshy, as if they are broken or wounded the milky juice will flow out abundantly; and if the roots are planted before the wounds have dried up, they generally rot in the ground. The best time for parting the roots is in July, as soon as the stalks have decayed. The soil most suitable for this plant is a mixture of loam and peat.

GENUS II.

ROELLA *Lin.* THE ROELLA.

Lin. Syst. PENTANDRIA MONOGYNIA.

Generic Character.—Calyx and corolla five-lobed. Stamens five. Capsule two-celled, always terminated by the permanent calycine segments, dehiscing irregularly at the apex. (*G. Don.*)

Description, &c.—The plants belonging to this genus are small shrubs, with some few herbaceous plants, all the species being natives of the Cape of Good Hope. Only one kind is common in British greenhouses. The name of the genus was given in honour of Professor Roell of Amsterdam.

1.—ROELLA CILIATA *Lin.* THE PRICKLY ROELLA.

Engravings.—Bot. Mag., t. 378; Paxt. Mag. of Bot., vol. vii., p. 245.

Specific Character.—Leaves erect, linear, acuminated, ciliated; upper ones longer than the others and entire. Flowers solitary. Lobes of the calyx ciliated and laciniatedly toothed. Corolla longer than the calycine lobes.

Description, &c.—The flowers of this plant are very singular from possessing five distinct shades of colour. At the bottom of the flower there is a large space of white or rather cream-colour; next is a circle of deep blue, so dark as closely to resemble black; the next circle is greyish-blue resembling satin; and the next nearly white, the outer part of the flower being of a pale pinkish purple. The flowers are solitary and terminal, and they are surrounded by imbricated leaves. The shrub is of low growth, and it is a native of the Cape, whence it was introduced in 1774. It is usually increased by cuttings, but they are rather difficult to strike.

CHAPTER XXXVIII.

LOBELIACEÆ *A. Dec.*

Essential Character.—Calyx superior, five-lobed or entire. Corolla monopetalous, somewhat valvate in æstivation, irregular, inserted in the calyx, five-lobed or deeply five-cleft. Stamens five, inserted in the calyx alternately with the lobes of the corolla. Anthers cohering. Ovary inferior, with from one to three cells. Ovules very numerous, either attached to the axis or parietal. Style simple. Stigma surrounded by a cup-like fringe. Fruit capsular, one or more celled, many-seeded, dehiscing at the apex. (*Lindley.*)

Description, &c.—This order was formerly included in *Campanulaceæ*, from which it differs in the style being without hairs excepting at the summit surrounding the stigma, and in some other particulars. In both orders the plants abound in milky juice. Most of the Lobeliaceæ are poisonous.

GENUS I.

SIPHOCAMPYLOS *Pohl.* THE SIPHOCAMPYLOS.

Lin. Syst. TETRANDRIA MONOGYNIA.

Generic Character.—Limb of the calyx five-parted. Corolla with a curved undivided tube, which is ventricose in the middle, and a five-parted bilabiate limb. Stamens and anthers combined; anthers bearded. Capsule two-celled, two-valved, dehiscent. (*G. Don.*)

Description, &c.—This is a genus of very ornamental plants, which were first separated from *Lobelia* by Dr. Pohl of Vienna. The name signifies a curved tube, in allusion to the curved tube of the corolla.

1.—SIPHOCAMPYLOS CAVANILLESII *Hort.* CAVANILLES' SIPHOCAMPYLOS.

Synonymes.—Lobelia Cavanillesii *Mart.*; L. persicifolia *Humb. et Kunth*; L. laxiflora *var.* angustifolia *Dec.*; Rapunticum Kunthianum *Presl.*

Engravings.—Bot. Mag., t. 3600; The Botanist, t. 236; and our *fig.* 1, in Pl. 37.

Specific Character.—Stem woody, erect, but slender and lax, and marked by prominent scars where the leaves have fallen. Leaves narrow, lanceolate, acutely serrulate, spreading. Peduncles filiform, wiry, about as long as the leaves. Calyx undulate, glabrous, five-cleft; segments ovate-linear. Corolla glabrous, bilabiate, inserted in the throat of the calyx, and cleft along the whole of its upper side. Stamens a little shorter than the corolla and inserted at its base into the calyx, monadelphous. Anthers coherent along their whole extent, densely covered with long white hairs, which arise from the lines between them. Pistil rather shorter than the stamens.

Description, &c.—The flowers of this plant are very pretty, though they are inferior in beauty to those of *S. bicolor.* As they are produced early in spring, it is generally reckoned best to keep the plant either in a stove or a hotbed during the winter months. The species is a native of Mexico, whence it was introduced in 1837.

OTHER SPECIES OF SIPHOCAMPYLOS.

S. BICOLOR *D. Don.*

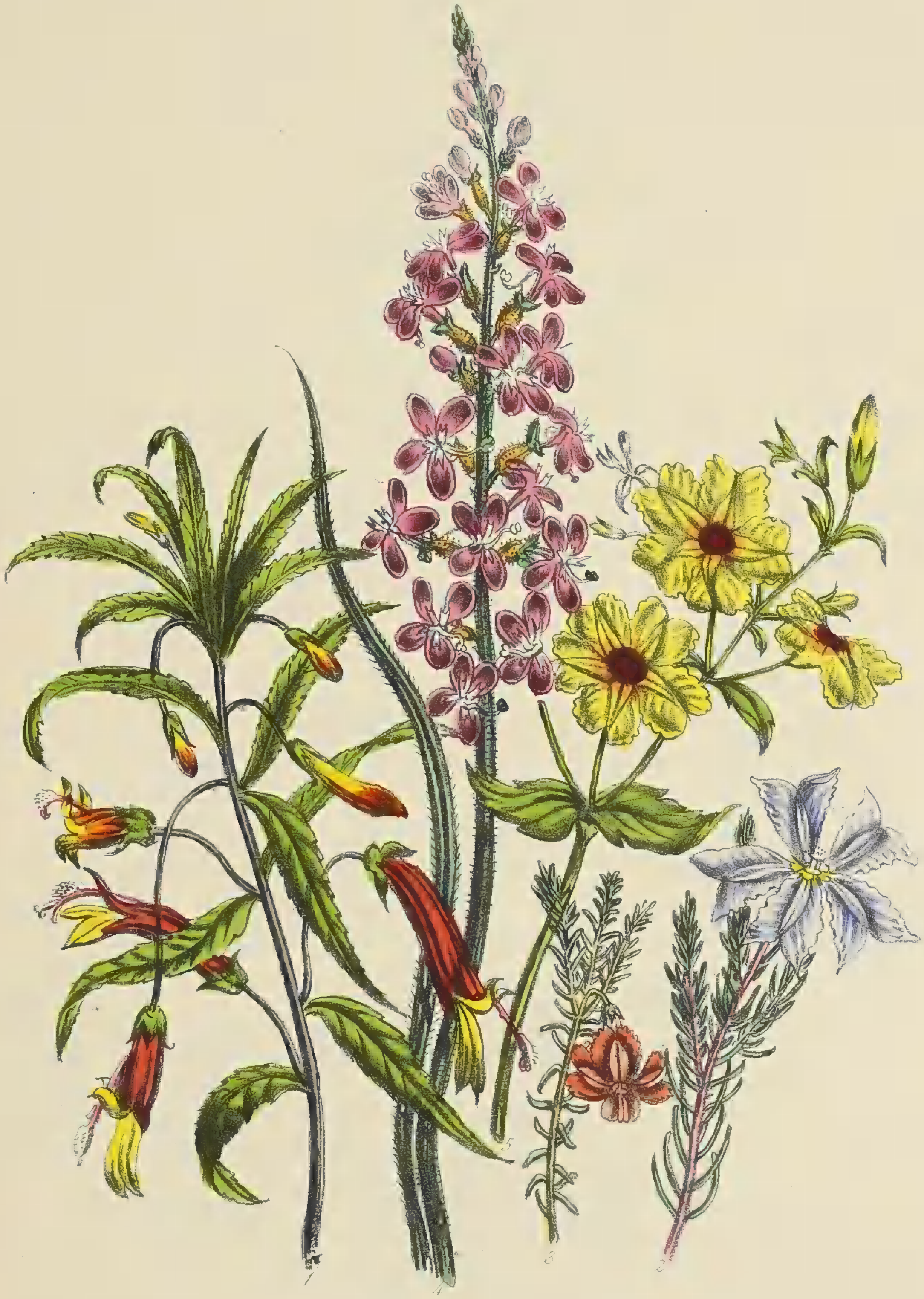
This species, like the preceding one, is now placed by some botanists in the genus *Lobelia.* It closely resembles the last species, excepting that its flowers are of a more brilliant colour, and its leaves larger and broader. It is a native of Mexico, whence it was also introduced in 1837.

S. REVOLUTUS *Graham.*

This species is said to be a true *Siphocampylos*, but it is much less ornamental than those which have been already described. It is also a native of Mexico, whence it was introduced in 1839.

S. BETULÆFOLIA *Gardn.*

This is perhaps the most splendid of all the genus. The flowers are very large, and extremely beautiful, the tube being of a remarkably brilliant scarlet, and the limb of a bright golden yellow. The leaves are also very handsome, but more like those of a *Begonia* than those of a Birch, the sides of each leaf being somewhat unequal, and the upper surface being of a delicate light green, with a beautiful pale purplish hue beneath. The species is a native of the Organ Mountains in Brazil, whence it was introduced in 1842.



1 Siphocampylos Cavanillesii 2 Leschenaultia biloba 3 Leschenaultia formosa
4 Stylidium graminifolium _ 5 Euthales macrophylla

CHAPTER XXXIX.

TYLIDEÆ *R. Brown.*

Essential Character.—Calyx adherent, with from two to six divisions, bilabiate or regular, persistent. Corolla monopetalous, falling off late; its limb irregular, rarely regular, with from five to six divisions, imbricated in æstivation. Stamens two; filaments connate with the style into a longitudinal column; anthers twin, sometimes simple, lying over the stigma; pollen globose, simple, sometimes angular. Ovary two-celled, many-seeded, sometimes one-celled, in consequence of the contraction of the dissepiment; often surmounted with a single gland in front, or two opposite ones. Style one. Stigma entire or bifid. Ovules anatropal. Capsule with two valves and two cells, the dissepiment between which being sometimes either contracted or separable from the inflexed margins of the valves, the capsule becomes, as it were, one-celled. Seeds small, erect, sometimes stalked, attached to the axis of the dissepiment; embryo scarcely known; said to be minute, inclosed in a fleshy, somewhat oily, albumen. (*Lindley.*)

Description, &c.—The plants belonging to this order are mostly natives of New Holland, where they are found in marshy ground. Their botanical construction is very curious: the stamens and the style are blended so as to form a column, in a cavity at the apex of which is placed the stigma, "surrounded and concealed by the anthers." The principal genus is *Stylidium*.

GENUS I.

STYLIDIUM *Swartz.* THE STYLIDIUM.

Lin. Syst. GYNANDRIA DIANDRIA.

Generic Character.—Calyx two-parted, bilabiate. Column with a double flexure. Anthers two-lobed; lobes divaricate. Stigma undivided. Capsule two-celled. (*G. Don.*)

Description, &c.—The curious construction of the style and stigma peculiar to the plants of the order is very conspicuous in this genus, as the column, which is very slender, and longer than the limb of the corolla, bends over it, or, rather, hangs down between its lobes, so as to be very conspicuous; and if it is touched with a pin, it instantly starts from its place to the opposite side of the flower with the greatest rapidity, shrinking from the approach of the pin as though it really felt pain. The name of *Stylidium* is derived from the Greek word *stylos*, a column. There are numerous species, but it will be sufficient to mention one or two of those most common in British greenhouses.

1.—STYLIDIUM GRAMINIFOLIUM *Swartz.* THE GRASS-LEAVED STYLIDIUM.

Synonymes.—S. serrulatum *Pers.*; Ventenatia major *Smith*; Candollea serrulata *Labill.*

Engravings.—Bot. Reg., t. 90; and our *fig.* 4, in Pl. 37.

Specific Character.—Leaves linear, with denticulated edges. Raceme subspicate and beset, as well as the scape, with glandular hairs. Lip of the corolla appendiculate at the base.

Description, &c.—This species is remarkable for its slender grass-like leaves, and its being covered in every part with glandular hairs somewhat like those of the *Drosera*, or Sun-dew. The flowers are of a purplish red, and continue nearly all the summer. The plant is a native of both New South Wales and Van Diemen's Land, whence it was introduced in 1803. There is no difficulty in the culture, excepting that it should have as much light and air as possible.

OTHER SPECIES OF STYLIDIUM.

S. DRUMMONDII *Graham.*

This species was introduced from the Swan River in 1839. It is very ornamental, the flowers being large, of a delicate pale lilac, and disposed in a loose panicle. It generally comes into blossom in November, and as each flower remains expanded several weeks, and as the flowers follow each other in succession very slowly, it remains in perfection all the winter; and, indeed, the flowers generally continue on it till the middle of March.

S. ADNATUM *R. Brown.*

This is a very pretty little species with flesh-coloured flowers, which was sent home from King George's Sound, in New Holland, in 1824.

S. TENUIFOLIUM *R. Brown.*

This is the species most commonly found in greenhouses. It has very pale flowers, and is by no means so ornamental as many of the other kinds. It is a native of the country near Port Jackson, whence it was introduced in 1818.

CHAPTER XL.

GOODENIACEÆ *Lindl.*

Essential Character.—Calyx usually superior, and in from three to five divisions. Corolla superior, monopetalous, irregular, withering; limb five-parted, with one or two lips. Stamens five, distinct, alternate with the segments of the corolla; anthers two-celled, bursting longitudinally. Ovary generally one-celled, with a free central placenta. Style one. Stigma fleshy, surrounded by a membranous cup. Fruit a capsule. Seeds usually with a thickened testa, which is sometimes nut-like. Albumen fleshy, with an erect embryo and leafy cotyledons.

Description, &c.—The greatest botanical peculiarity of this order is, the indusium or cup which surrounds the stigma. The species are generally herbaceous plants, which differ from the Lobelias and Campanulas in being devoid of milk. There are several genera, most of which contain only Australian plants.

GENUS I.

EUTHALES *R. Br.* THE EUTHALES.

Lin. Syst. PENTANDRIA MONOGYNIA.

Generic Character.—Calyx inferior, with an unequal five-cleft limb. Corolla adhering to the tube below the ovarium, cleft on the upper side, with a bilabiate limb. Style undivided. Indusium of the stigma bilabiate. Capsule four-valved, two-celled at the base. Seeds imbricated, compressed. (*G. Don.*)

Description, &c.—This genus was formed on a species of *Goodenia.* The name of *Euthales* signifies well flowered, in allusion to its gay and numerous flowers. Only two species have as yet been discovered.

1.—EUTHALES TRINERVIS *R. Br.* THE THREE-NERVED EUTHALES.

Synonymes.—Goodenia tenella *Andr.*; Velleia trinervis *Labill.*
Engravings.—Bot. Mag., t. 1137; Bot. Rep., t. 466.
Specific Character.—Leaves all radical, spatulate, fleshy, veined beneath. Stems first bending towards the earth and then rising erect, dichotomous. Flowers solitary, on long peduncles. Capsule four-cleft at the top.

Description, &c.—This species has golden yellow flowers, with a rich dark crimson spot at the base of the lower lip. It is a native of New Holland, whence it was introduced in 1802, and when raised from seeds it generally flowers the first year.

2.—EUTHALES MACROPHYLLA *Lindl.* THE LARGE-LEAVED EUTHALES.

Engravings.—Bot. Reg. for 1841, t. 3; The Botanist, t. 209; and our *fig.* 5, in Pl. 37.

Specific Character.—Stem erect, fleshy, branched. Leaves opposite, petiolate, oblong, dentate. Flowers in a loose dichotomous panicle.

Description, &c.—"This species," says Dr Lindley, "is very different from *E. trinervis,* having a strong erect branched stem, with broad deep green leaves as much as six inches long. It grows three or four feet high, and is covered with gay yellow and brown flowers all the summer." This plant was introduced in 1840 by Captain Mangles, to whom the floricultural world is indebted for the introduction of so many new and beautiful Australian plants. It grows well in any rich free soil, and strikes readily from cuttings. It may be planted out during the summer months and will flower freely in the open ground, but it is killed by the first approach of frost. It should be observed that these plants when kept in pots should be well drained, as they are apt to damp off when they have too much water.

GENUS II.

LESCHENAULTIA *R. Br.* THE LESCHENAULTIA.

Lin. Syst. PENTANDRIA MONOGYNIA.

Generic Character.—Calyx superior. Corolla with the tube cleft on the upper side. Anthers at first cohering. Stigma obsolete, bilabiate, in the bottom of the indusium. Capsule prismatic, two-celled, four-valved. Seeds cubical or nucumentaceous. (*G. Don.*)

Description, &c.—The species in this genus are small heath-like shrubs, generally with bright scarlet flowers. One species, however, has lately been discovered, the flowers of which are of a beautiful clear blue; thus forming a complete contradiction to the hypothesis of De Candolle, who supposed that clear blue flowers were never found in the same genus with plants bearing flowers of a bright scarlet or yellowish red. The name of the genus was given in honour of M. Leschenault, a French botanist and traveller. It may be interesting to botanical students to know that the pollen in all the species of Leschenaultia is composed of four combined sporules.

1.—LESCHENAULTIA FORMOSA *R. Br.* THE BEAUTIFUL LESCHENAULTIA.

Synonymes.—L. Baxterii *G. Don*; L. oblata *Sweet.*

Engravings.—Bot. Mag., t. 2600; Bot. Reg., t. 916; and our *fig.* 3, in Pl. 37.

Specific Character.—Flowers axillary, solitary, without bracts, somewhat drooping. Corolla bilabiate, glabrous.

Description, &c.—This plant is so well known that it seems unnecessary to give any detailed account of it, and yet its botanical construction is so curious that it well deserves to be described at length. The indusium which covers the stigma is a compressed two-lipped purple cup, lined with soft down on the outside, and which appears to serve the purpose of scooping the pollen out of the cells of the anthers, and collecting and retaining it till it is wanted for the stigma, which lies at the very bottom of it. This species was introduced in 1824 from the south coast of New Holland, of which it is a native. There are two kinds so nearly allied that it is very difficult to discern any difference between them, excepting that the flowers of one kind are somewhat larger, brighter, and more abundant than those of the other.

2.—LESCHENAULTIA BILOBA *Lindl.* THE TWO-LOBED LESCHENAULTIA.

Synonyme.—L. grandiflora *Dec.*

Engravings.—Bot. Reg. for 1842, t. 2; Paxton's Mag. of Bot., vol. viii., p. 151; and our *fig.* 2, in Pl. 37.

Specific Character.—Leaves linear, obtuse. Flowers in few-flowered lax corymbs. Tube of the corolla equal in length to the sepals, smooth on the outer surface, hairy within; segments wedge-shaped, two-lobed, points crowned with a mucro. Filaments glabrous.

Description, &c.—When this plant was first introduced, it created an extraordinary sensation. The old kinds of Leschenaultia were so well known, and so universally admired, that every one who heard of a blue-flowered plant in the same genus was desirous of possessing it. It was found, however, that the blue-flowered species varied exceedingly in different plants, and that some of the plants were not nearly so handsome as the old *L. Baxterii* and *L. formosa*. It is, however, after all a very handsome plant, and well deserving of cultivation. It is a native of the neighbourhood of the Swan River, whence it was introduced in 1842. All the species of Leschenaultia require exactly the same treatment as Heaths. They should be grown in a mixture of peat and vegetable mould, and should have their shoots occasionally stopped to force them to send out numerous branches so as to form compact bushes.

OTHER SPECIES OF LESCHENAULTIA.

L. SPLENDENS *Dec.*

This is an extremely beautiful evergreen plant, growing about two feet high, and bearing a profusion of brilliant scarlet flowers, which are produced in corymbs at the extremities of the branches. It is a native of the neighbourhood of the Swan River, whence it was introduced in 1847.

L. ARCUATA *Dec.*

This is another species also a native of the neighbourhood of the Swan River, whence it was introduced in 1847. Its flowers are remarkably large, being nearly twice the size of those of the other species. They are of a bright yellow, and tinged at the tips with a purplish crimson.

OTHER GENERA BELONGING TO THE ORDER GOODENIACEÆ.

GOODENIA *Smith.*

This genus consists of numerous species of Australian plants, generally with yellow flowers. The handsomest species is *G. grandiflora.*

VELLEIA *Smith.*

The plants in this small genus are very nearly allied to the last. They are also all Australian plants with yellow flowers.

DAMPIERA *R. Br.*

This is a genus of very ornamental plants with blue flowers.

CHAPTER XLI.

ERICACEÆ *Juss.*

Essential Character.—Calyx four or five-cleft, nearly equal, inferior, persistent. Corolla hypogynous, monopetalous, four or five-cleft, occasionally separable into four or five pieces, regular or irregular, often withering, with an imbricated æstivation. Stamens definite, equal in number to the segments of the corolla, or twice as many, hypogynous, or scarcely inserted into the base of the corolla; anthers two-celled, the cells hard and dry, separate either at the apex or base, where they are furnished with some kind of appendage, and dehiscing by a pore. Ovary surrounded at the base by a disk, or secreting scales, many-celled, many-seeded; style one, straight; stigma one, undivided or toothed, or three-cleft, with an indication of an indusium. Fruit capsular, many-celled, with central placentæ; dehiscence various. Seeds indefinite, minute; testa firmly adhering to the kernel; embryo cylindrical, in the axis of fleshy albumen; radicle much longer than the cotyledons and next the hilum. (*Lindley.*)

Description, &c.—The plants belonging to this order are very ornamental, but most of them, except those contained in the genus *Erica*, are hardy.

GENUS I.

ERICA *Lin.* THE HEATH.

Lin. Syst. OCTANDRIA MONOGYNIA.

Generic Character.—Calyx four-parted. Corolla campanulate or ventricose, with a four-lobed limb. Anthers two-horned or emarginate, exserted or latent. Stigma somewhat four-lobed. Capsules from four to eight-celled, opening with from four to eight valves, surrounded by the persistent calyx.

Description, &c.—The species included in this genus are all low evergreen shrubs, with slender sharply-pointed leaves. They are very numerous, amounting to several hundreds. It will, therefore, be impossible within the limits of a work like the present to do more than to take a very few of the most ornamental.

1.—ERICA BANKSIANA *Ait.* SIR JOSEPH BANKS'S HEATH.

Synonymes.—E. fragilis *Salisb.*; Ectasis Banksiana *D. Don.*

Engravings.—Andrews's Heaths, t. 66; Paxton's Mag. of Bot. vol. vii., p. 243; and our *fig.* 5, in Pl. 38.

Specific Character.—Leaves mucronate. Corolla cylindrical, with a reflexed limb. Stamens much exserted, with dilated filaments. Pericarp bearded.

Description, &c.—This very beautiful species has the singular appearance of one flower growing out of another, from the stamens being much exserted and the filaments dilated so as to form a tube, to which the anthers are attached and form a kind of fringe. The plant is a native of the Cape of Good Hope, whence it was introduced in 1787. It generally begins to flower in February, and continues till July.

2.—ERICA TUMIDA *Ker.* THE TUMID HEATH.

Engravings.—Bot. Reg., t. 65; and our *fig.* 1, in Pl. 38.

Specific Character.—Pubescent. Bracts subulate, near the calyx. Leaves decussate, in fours. Corolla hairy, much longer than the calyx.

Description, &c.—This species is remarkable for the swollen tube of the flower, which is enormously large in proportion to the limb. The flowers are very brilliant in colour, but the brightness of their hue is somewhat dimmed by the thick pubescence which clothes them. The leaves of the plant are of a very glaucous green. The stamens are completely hidden in the tube of the flower. The species is a native of the Cape of Good Hope, whence it was introduced about 1812.

3.—ERICA ARDENS *Andr.* THE GLOWING HEATH.

Synonyme.—Pachysa ardens *D. Don.*

Engravings.—Bot. Reg., t. 115; Andrews's Heaths, t. 14; Lodd. Bot. Cab., t. 47; and our *fig.* 6, in Pl. 38.

Specific Character.—Leaves linear, spreading, glabrous, three in a whorl, stiff. Corolla nearly globose, coriaceous. Stamens inclosed.

Description, &c.—A very pretty little plant, which grows in a very compact manner, and forms an elegant little shrub even when not in flower. It is a native of the Cape of Good Hope, whence it was introduced in 1800.

4.—ERICA AITONIANA *Andr.* MR. AITON'S HEATH.

Synonymes.—E. jasminiflora *Salisb.*; Euryloma Aitonii *D. Don.*

Engravings.—Bot. Mag., t. 429; Andrews's Heaths, t. 25; Lodd. Bot. Cab., t. 144; and our *fig.* 4, in Pl. 38.

Specific Character.—Leaves three in a whorl, linear, serrulated, erect. Flowers terminal, usually by threes. Bracteas remote from the calyx. Corolla viscid, with a cylindrical tube, which is ventricose at the top, and large ovate segments. Style exserted.

Description, &c.—A very singular-looking species, the flowers of which look shining as though they had been varnished. It is a native of the Cape of Good Hope, whence it was introduced in 1790.

5.—ERICA JACKSONII *Hort.* MR. JACKSON'S HEATH.

Engravings.—Paxton's Mag. of Bot., vol. viii., p. 149; and our *fig.* 2, in Pl. 38.

Specific Character.—Leaves in whorls consisting of two large and two small whorls. Flowers generally four in a cluster, much inflated at the base; limb reflexed.

Description, &c.—This is a hybrid raised by Mr. Jackson, nurseryman, Kingston, in 1841. It is a hard wooded plant, and very easy to cultivate.

6.—ERICA NEILLII *Hort.* DR. NEILL'S HEATH.

Engravings.—Paxton's Mag. of Bot., vol. ix., p. 195; and our *fig.* 3, in Pl. 38.

Specific Character.—Leaves crowded. Flowers tubular. Stamens inclosed.

Description, &c.—This pretty little heath is a hybrid raised in the Edinburgh Botanic Garden, and named in honour of Dr. Neill, who may be regarded as the father of Scottish botany. It was raised in 1842. It is observed in the description of this species in "Paxton's Magazine," that Heaths should always be watered with pond or rain-water, as if they are watered with hard water their leaves will turn yellow and soon fall off.

CHAPTER XLII.

EPACRIDEÆ *R. Brown.*

Essential Character.—Calyx usually five-parted and coloured, permanent. Corolla hypogynous, monopetalous; limb five-cleft, equal. Stamens equal in number to the segments of the corolla and alternating with them. Anthers simple, dehiscing longitudinally. Pollen sub-globose, rather angular, or composed of three combined globules. Ovarium sessile, usually girded by five scales, generally many-celled. Style one. Stigma one, sometimes two. Fruit various. Seeds albuminous. Embryo straight, slender, longer than the half of the albumen.

Description, &c. There are numerous genera included in this order, but the only ones which will be here described are *Epacris* and *Styphelia*.

GENUS I.

STYPHELIA *R. Br.* THE STYPHELIA.

Lin. Syst. PENTANDRIA MONOGYNIA.

Generic Character.—Calyx girded by four or more bracteas. Corolla elongated, tubular; tube furnished with five fascicles of villæ near the base inside; segments of the limb revolute, bearded. Filaments exserted. Ovarium nearly dry, containing a solid bony putamen. (*G. Don.*)

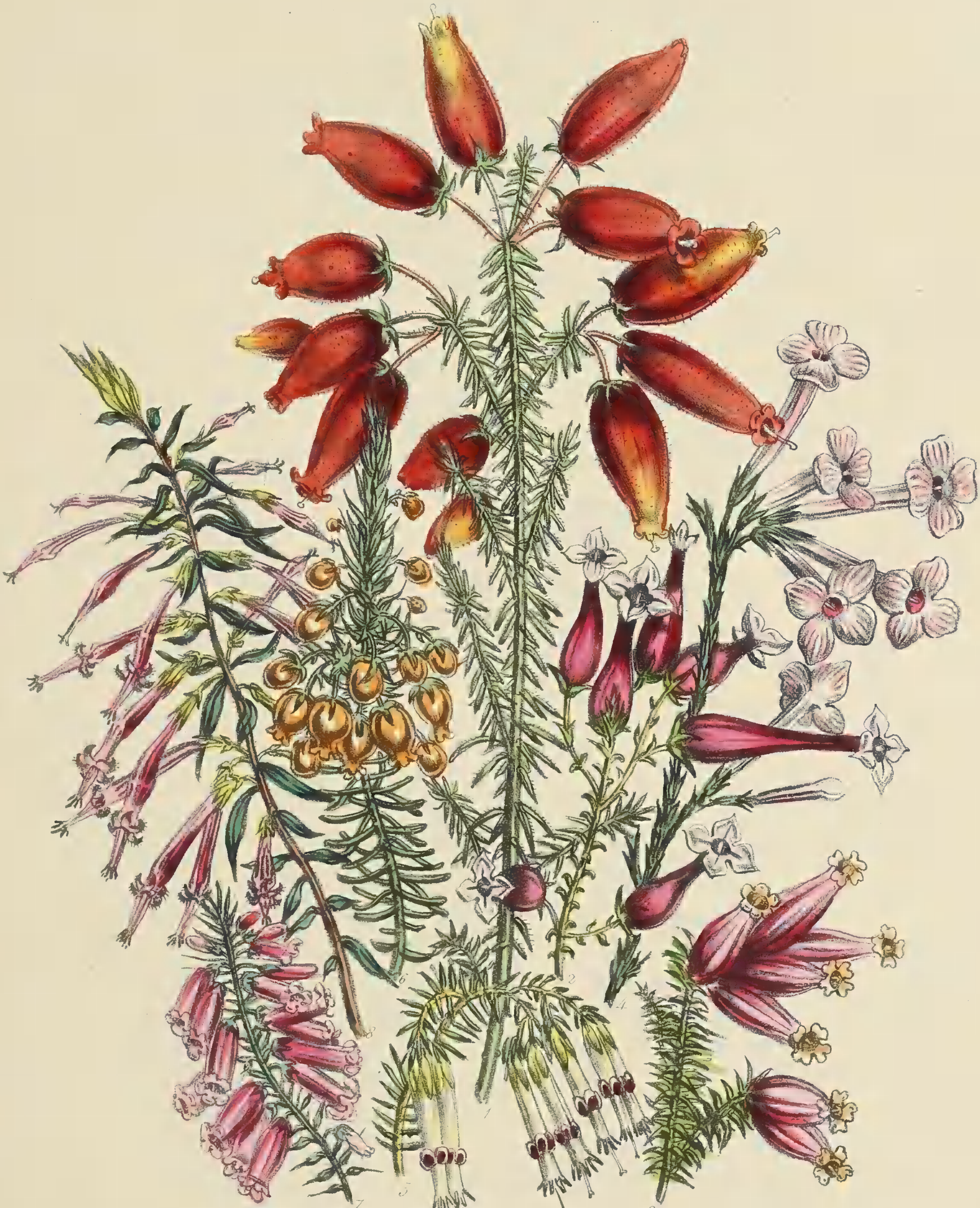
Description, &c.—The species included in this genus are all natives of Australia, and they are all singular-looking plants with the stamens very much exserted when the flower is fully expanded. The name of *Styphelia* is derived from a Greek word signifying harsh, in allusion to the stiff and compact habit of growth of the species.

1.—STYPHELIA TUBIFLORA *Smith.* THE TUBE-FLOWERED STYPHELIA.

Engravings.—Lodd. Bot. Cab., t. 1938; Paxton's Mag. of Bot., vol. xii., p. 29; The Botanist, t. 142; and our *fig.* 8, in Pl. 38.

Specific Character.—Leaves linear, obovate, mucronate, rather scabrous above, with revolute edges. Flowers drooping. (*G. Don.*)

Description, &c.—When this very elegant plant first goes into flower, the flowers only slightly open at the point, so as to show the segments of the limb but entirely to conceal the stamens. By degrees the segments divide and curl back, so as to show a very considerable portion of the stamens, and in this state the flowers are



Erica tumida 2 Erica Jacksonii 3 Erica Neillii 4 Erica Aitoniana. 5
Erica Banksiana 6 Erica ardens 7 Epacris impressa 8 Styphelia tubiflora

very ornamental, particularly as the segments are bearded inside, and therefore display a kind of fringe when they roll back. The species is a native of the south-eastern portion of Australia, being found abundantly in the neighbourhood of Port Jackson. It was introduced in 1830.

There are several other species, but the most ornamental, next to that already described, is *S. triflora*. *S. pinifolia* is also very ornamental, but it is now removed to a new genus, under the name of *Stenanthera*.

GENUS II.

EPACRIS *Smith.* THE EPACRIS.

Lin. Syst. PENTANDRIA MONOGYNIA.

Generic Character.—Calyx coloured, many-bracteate, the bracteas of the same texture as the calyx. Corolla tubular, with a beardless limb. Stamens epipetalous. Anthers peltate above the middle. Hypogynous scales five. Placentas adnate to the central column. (*G. Don.*)

Description, &c.—This is a genus of very ornamental plants, bearing so much resemblance to the heaths as to be supposed to belong to that family by the first settlers in New South Wales. The flowers, however, are easily distinguished from those of all kinds of heath, not only from their general form, but from their being always disposed in leafy spikes. The name of *Epacris* signifies upon a high place, because most of the species grow on lofty mountains. The species are very numerous, but the limits of the present work will not allow of more than one or two of the most ornamental kinds being described.

1.—EPACRIS IMPRESSA *Labill.* THE BEAUTIFUL EPACRIS.

Engravings.—Bot. Mag., t. 3407; Bot. Reg. for 1839, t. 19; Lodd. Bot. Cab., t. 1691; Sweet's Flora Austriaca, t. 4; Paxton's Mag. of Bot., vol. iv., p. 125; The Botanist, t. 232; and our *fig.* 7, in Pl. 38.

Specific Character.—Branches pubescent. Leaves sessile, subreflexed, linear-lanceolate, glaucous, mucronate. Flowers twin, on very short axillary pedicels. Calyx and scales with a velvety pubescence.

Description, &c.—This very ornamental species is a native of Van Diemen's Land, whence it was introduced in 1824. There are numerous varieties of it, and, in fact, it varies so much when raised from seed, that it is almost impossible to guess what kind of flower will be produced when the seeds are sown. Luckily both the species and the varieties are all very ornamental, and, like all the other species of the genus, they are valuable plants because they flower all the winter. *E. impressa* may be propagated either by seeds or by cuttings.

OTHER SPECIES OF EPACRIS.

E. MINIATA *Lindl.*

This is perhaps the most beautiful species of the genus, as the tube of its flowers is of a brilliant vermilion, and the limb a dazzling snow-white. It is, indeed, hardly possible to conceive a more beautiful plant of this family. The species, like the others, is a native of Van Diemen's Land, whence it was introduced in 1844.

E. NIVALIS *Lodd.*

This species is extremely beautiful, not only on account of its snow-white flowers, but from their habit of growing always on one side of the branch, so that they hang from it like fringe, while the branches themselves, being very long and flexible, may be trained so as to form festoons, or, in short, in any way that may be judged desirable. In some places where the species is planted in the free ground in a conservatory, the branches become most exceedingly ornamental. Like the others this plant is a native of Australia, whence it was introduced in 1829.

CHAPTER XLIII.

ASCLEPIADEÆ *R. Brown.*

Essential Character.—Calyx five-cleft, permanent. Corolla monopetalous, hypogynous, five-lobed. Stamens five, alternating with the segments of the corolla. Filaments usually connected. Anthers two-celled. Pollen at the bursting of the anthers coalescing into masses equal in number to the cells. Ovaria two. Styles two, close together and having one stigma common to both. Follicles two. Seeds numerous, usually furnished with a tuft of hairs at the umbilicus. Albumen twin. Embryo straight, with leafy cotyledons.

Description, &c.—Many of the plants belonging to this order are climbers of great beauty, such as the *Hoya carnosa*, so well known for its fleshy leaves and for its umbels of beautiful wax-like odoriferous flowers distilling honey. There are many other beautiful and curious plants belonging to the order, but I have only room for two, which are probably not so well known as the rest.

GENUS I.

TWEEDIA *Hook.* THE TWEEDIA.

Lin. Syst. PENTANDRIA DIGYNIA.

Generic Character.—Calyx five-parted. Corolla campanulate; mouth crowned; scales five, fleshy, retuse or bifid, exserted. Stamens combined into a tube. Anthers terminating in a membrane. Masses of pollen ventricose, attenuated at the apex, where they are fixed, and pendulous. Stigma elongately acuminate, two-cleft.

Description, &c.—This genus was named by Sir W. J. Hooker in honour of Mr. Tweedie, a collector of plants in South America, and who discovered it and sent it home.

1.—TWEEDIA CÆRULEA *D. Don.* THE BLUE-FLOWERED TWEEDIA.

Engravings.—Bot. Mag., t. 3630; Sweet's Brit. Flow. Gard., 2nd series, t. 407; Paxton's Mag. of Bot., vol vi., p. 125; The Botanist, t. 55; and our *fig.* 5, in Pl. 39.

Synonyme.—T. versicolor *Hook.*

Specific Character.—Stem climbing, tomentose. Leaves opposite, cordate-oblong.

Description, &c.—This is an exceedingly beautiful plant when properly grown, but when it is kept too warm, it becomes weak and the flowers turn of a pale bluish grey. The best way of growing it is to keep it in a greenhouse till the latter end of May or the beginning of June, and to prune it and remove it to a greenhouse in autumn. Thus treated, it appears perfectly herbaceous, but when kept under glass all the year it becomes shrubby. It was discovered by Mr. Tweedie in the neighbourhood of Buenos Ayres, and introduced by him into this country in 1836.

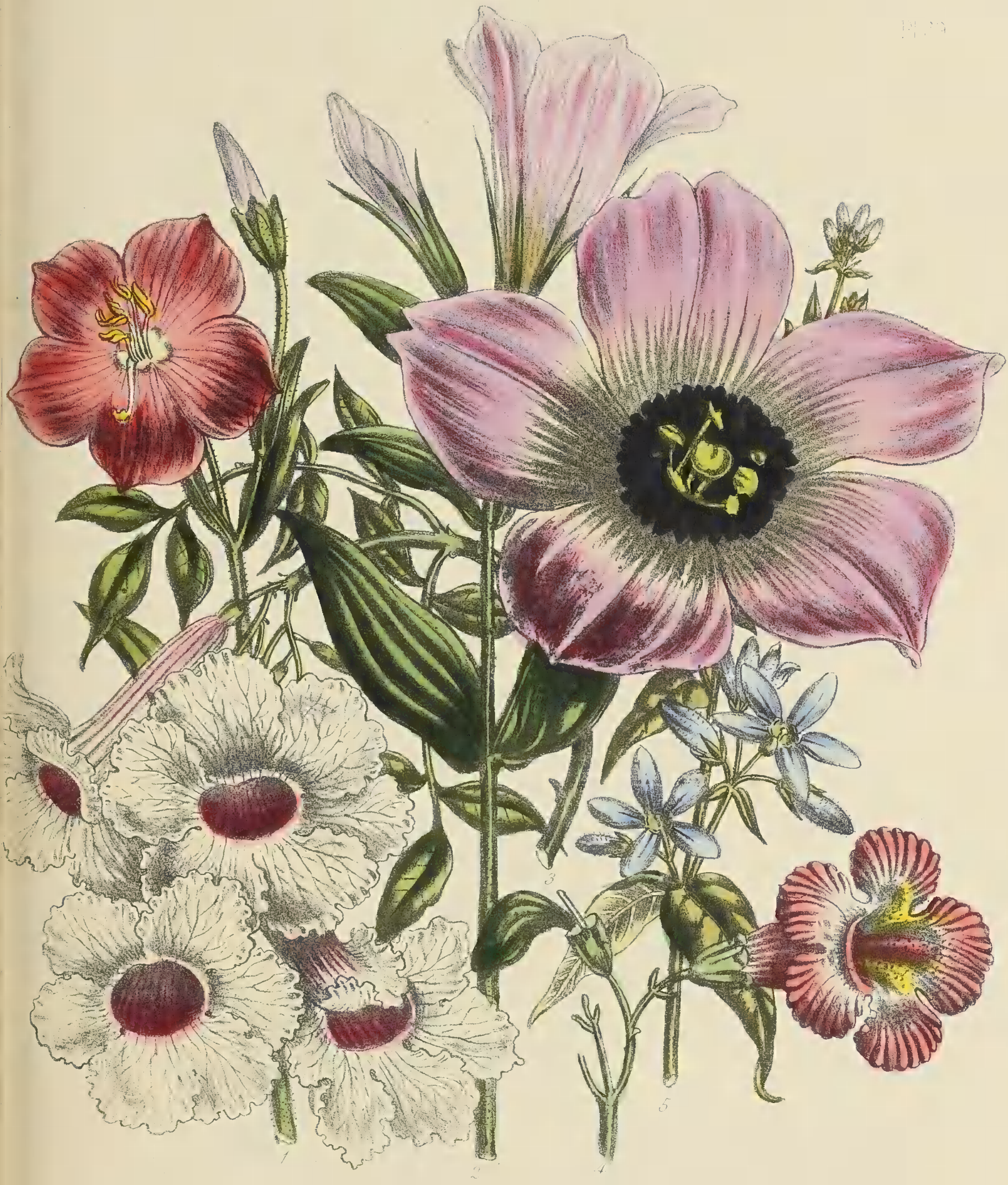
GENUS II.

PHILIBERTIA *H. B. et Kunth.* THE PHILIBERTIA.

Lin. Syst. PENTANDRIA DIGYNIA.

Generic Character.—Corolla urceolately rotate, sinuately five-lobed; lobes acute, intersected by as many teeth. Corona double; outer one ring-formed, in the bottom of the corolla, entire, fleshy, undulated; inner one inserted higher up with the tube of the filaments, five-leaved; leaflets entire. Anthers terminated by a membrane; pollen-masses clavately cylindrical, fixed beneath their apexes, pendulous. Stigma bi-apiculated. (*G. Don.*)

Description, &c.—This is a small genus of South American plants, only one species of which has as yet been



1 Chironia decussata, 2 Lisianthus Russellianus, 3. Tecoma jasminoides.
4. Bignonia Telfairiæ 5 Tweedia cærulea.

introduced. It is named in honour of J C. Philibert, the author of some botanical works published about the beginning of the present century.

1.—PHILIBERTIA GRANDIFLORA *Hook.* THE LARGE-FLOWERED PHILIBERTIA.

Synonyme.—P. gracilis *D. Don.*

Engravings.—Bot. Mag., t. 3618; Bot. Reg. for 1843, t. 13; Sweet's Brit. Flow. Gard., 2nd series, t. 403; Paxton's Mag. of Bot., vol. vi., p. 7; and The Botanist, t. 46.

Specific Character.— Leaves deeply cordate, acuminate, subtomentose. Corolla three times as long as the calyx, campanulate, externally hairy, smooth within. Crown double; exterior one annular, entire; interior one composed of five fleshy leaf-like segments, each having a short mucro near the apex.

Description, &c.—This is a very pretty twining plant, the seeds of which were sent from Buenos Ayres by Mr. Tweedie in 1835. It varies very much in the colour of its flowers, some being of a pale yellow, and others of various shades of crimson and dark brown. It also varies much in the quantity of down which covers it, the wild specimen which was sent over being quite woolly, while some of the specimens grown in England are only very slightly tomentose. It should be grown in a friable mould mixed with sand, the soil not being sifted but merely broken finely and mixed with the hand. The pots should be well drained, as the plants require to be kept nearly dry during the season of rest. When the plant is kept in a hothouse or in too warm a greenhouse, it is very apt to be attacked by the red spider.

CHAPTER XLIV.

GENTIANACEÆ *Lindl.*

Essential Character.—Calyx divided, inferior, persistent. Corolla monopetalous, hypogynous; limb regular, its lobes the same number as the divisions of the calyx, generally five. Stamens inserted upon the corolla, equal in number to the segments and alternating with them. Ovary composed of two carpels, one or two-celled, many-seeded. Style one. Stigmas two. Fruit a capsule or berry. Seeds small; testa single. Embryo minute, in the axis of soft fleshy albumen.

Description, &c.—Most of the plants contained in this order are natives of cool, or at least temperate climates, and only very few require a greenhouse in Great Britain.

GENUS I.

CHIRONIA *Lin.* THE CHIRONIA.

Lin. Syst. PENTANDRIA MONOGYNIA.

Generic Character.—Calyx five-parted. Corolla salver-shaped, with a narrow tube and a spreading limb, which is much longer than the tube. Stamens five; filaments broad, rising from the top of the tube of the corolla; anthers connivent, at length spirally twisted. Style declinate, a little longer than the stamens. Stigma capitate, assurgent. Capsule ovate, one-celled, two-valved. Seeds numerous. (*G. Don.*)

Description, &c.—There are several species in this genus and in the genus *Roslinia*, which has been formed from it, all of which are very ornamental; but the limits of the present work will only admit of one species being described. The word *Chironia* is derived from the Centaur Chiron, from the plant being anciently used in medicine, which was one of the sciences he taught to his pupil Achilles.

1.—CHIRONIA DECUSSATA *Vent.* THE CROSS-LEAVED CHIRONIA.

Synonymes.—C frutescens latifolia *Wendl.*; Roslinia frutescens var. *Mœnch.*

Engravings.—Bot. Mag., t. 707; and our *fig.* 1, in Pl. 39.

Specific Character.—Shrubby, subtomentose. Leaves decussate, oblong-obtuse. Calyx globose, in five parts.

Description, &c.—This plant has been supposed by some botanists to be only a variety of *C. frutescens*, which is very inferior to it in beauty. It is occasionally called in the nurseries *Chironia latifolia*, its leaves being much broader than those of another common species, viz. *C. jasminoides*. *C. decussata* is, however, by far the handsomest species of the genus, and it is of easy cultivation provided it be kept all the year in a greenhouse; but it will not bear planting out in the open ground, as it is very apt to damp off.

GENUS II.

LISIANTHUS *Browne.* THE LISIANTHUS.

Lin. Syst. PENTANDRIA MONOGYNIA.

Generic Character.—Calyx campanulate, five-cleft; segments erect, with membranous incumbent edges. Corolla funnel-shaped; tube ventricose on one side; limb equal, five-cleft. Anthers sagittate, incumbent, revolute when old. Style elongated. Stigma bilaminate. Seeds small, angular. (*G. Don.*)

Description, &c.—Most of the species belonging to this genus are annual plants, natives of the tropics, but some few are found in the southern part of Brazil, in a sufficiently mild climate to require only a greenhouse in Great Britain. The name of *Lisianthus* signifies dissolving flower, in allusion to some medicinal properties attributed to the genus.

1.—LISIANTHUS RUSSELLIANUS *Hook.* THE DUKE OF BEDFORD'S LISIANTHUS.

Synonyme.—L. glaucifolius *Nutt.*

Engravings.—Bot. Mag., t. 3626; Paxton's Mag. of Bot., vol. vi., p. 31; The Botanist, t. 148; and our *fig.* 2, in Pl. 39.

Specific Character.—Leaves ovate, very acute, from three to five-nerved. Flowers in panicles. Calyx deeply cut; segments very long, subulate. Corolla in five parts, campanulately funnel-shaped; segments broad, obovate, spreading.

Description, &c.—This very beautiful plant is a native of Mexico, but it has also been found in the warmer parts of North America. It was at first supposed to be an annual, but it is now found to be a half hardy perennial. It is generally propagated by seeds, which should be raised on a hotbed; but as seedling plants do not flower till they are three or four years old, it is now judged better to raise young plants from cuttings, which strike when the pots are plunged in a hotbed. This beautiful plant only thrives as an inhabitant of the greenhouse, as it is apt to damp off when planted in the open ground. It is found, however, to flower best when it can be placed in a stove or hotbed early in spring, so as to give it a little additional excitement when it is about to form its flower-buds Great care should be taken in shifting it, as its roots are few and very fragile. The species was introduced in 1835.

CHAPTER XLV.

BIGNONIACEÆ *R. Brown.*

Essential Character.—Corolla monopetalous, hypogynous, usually irregular, with a four or five-lobed limb. Stamens five; filaments unequal; anthers two-celled, cells usually divaricate. Ovarium girded by a glandular disk, two-celled, many-seeded. Style one. Stigma bilaminate. Capsule two-valved, two-celled. Seeds transversely foliaceous, compressed. Embryo straight, foliaceous.

Description, &c.—The plants belonging to this order have generally trumpet-shaped flowers which are extremely ornamental. Most of the species are natives of tropical America, and, of course, require a stove in Great Britain; but others will live in a greenhouse, and some few are quite hardy.

GENUS I.

BIGNONIA *Tourn.* THE BIGNONIA.

Lin. Syst. DIDYNAMIA ANGIOSPERMIA.

Generic Character.—Calyx five-toothed. Corolla with a short tube, a campanulate throat, and a five-lobed limb. Stamens five, didynamous; lobes of the anthers divaricate. Capsule silique-formed. Seeds transverse, compressed, winged on the margin.

Description, &c.—This genus was named in honour of the Abbé Bignon, Librarian to Louis XIV. The plants included in it are generally climbing shrubs, furnished with tendrils, and having very ornamental flowers. Most of the species are stove shrubs, natives of tropical America and Madagascar. Modern botanists have separated some of the species and formed them into a new genus under the name of *Tecoma*, but as the difference between the two genera only consists in the position of the seeds in the seed-vessel, I have not thought it worth while in the present work to keep them distinct. *Tecoma* is altered from the Mexican name of one of the species.

1.—BIGNONIA TELFAIRIÆ *Bojer.* MRS. TELFAIR'S BIGNONIA.

Engravings.—Bot. Mag., t. 2976; and our *fig.* 4, in Pl. 39.

Specific Character.—Arboreous. Leaves opposite, pinnate, having from six to nine pairs of leaflets and one terminal one; leaflets ovate-oblong, acuminate, shining. Flowers in lax terminal panicles. Silique cylindrical, acuminate, fleshy. Seeds broadly winged.

Description, &c.—This very beautiful plant is a native of Madagascar, where it is cultivated to a great extent, not only for the beauty of its flowers, but for its fleshy seed-pod, which is much admired as an article of food. Though a native of the tropics, it only requires a greenhouse in this country, as it is found only in temperate mountainous regions. It was introduced in 1830.

2.—BIGNONIA JASMINOIDES *Cunn.* THE JASMINE-LIKE BIGNONIA.

Synonyme.—Tecoma jasminoides *Lindl.*

Engravings.—Bot. Mag., t. 4004; Bot. Reg., t. 2002; Paxton's Mag. of Bot., vol. vi, p. 199; and our *fig.* 3, in Pl. 39, under the name of *Tecoma jasminoides.*

Specific Character.—Leaves pinnate, with two or three pairs of leaflets and a terminal one; leaflets ovate-lanceolate, glabrous, shining. Corolla campanulately funnel-shaped; limb flat; lobes nearly equal, undulate, crenate.

Description, &c.—This very beautiful greenhouse climber is a native of Moreton Bay, on the north-east coast of New Holland, whence it was introduced in 1830. It bears its beautiful flowers in the month of August. *B. Pandorea* Vent., syn. *Tecoma australis*, is another very splendid species of this genus which only requires a greenhouse.

CHAPTER XLVI.

SOLANACEÆ *Juss.*

Essential Character.—Calyx usually five-cleft, permanent, inferior. Corolla monopetalous, hypogynous; limb usually five-cleft and regular. Stamens epipetalous, equal in number to the segments of the corolla and alternating with them. Ovarium from one to four-celled, many-seeded. Style one. Stigma obtuse, rarely lobed. Fruit a capsule or a berry. Seeds numerous, sessile. Albumen fleshy.

Description, &c.—The genera in this order are very numerous, and generally speaking very ornamental. Many of them are annual plants, and some are quite hardy.

GENUS I.

SOLANUM *Tourn.* THE NIGHTSHADE.

Lin. Syst. PENTANDRIA MONOGYNIA.

Generic Character.—Calyx five-cleft, rarely four-cleft. Corolla rotate, rarely campanulate, usually five-cleft. Anthers connivent, dehiscing by pores at the apex. Berry two, rarely four-celled. (*G. Don.*)

Description, &c.—This genus is well known as containing the potato, but it is not perhaps so generally known that it also contains many very ornamental plants, principally natives of South America, but some also from New Zealand and various parts of Australia. In the present work only one species will be described, but it will be sufficient to give a general idea of the ornamental character of the plants.

1.—SOLANUM LYCIOIDES *Lin.* THE LYCIUM-LIKE SOLANUM.

Engravings.—Bot. Reg for 1846, t. 25; and our *fig.* 5, in Pl. 40.

Specific Character.—Stem shrubby. Branches spiny. Leaves lanceolate, petiolate, glabrous, sometimes subovate. Peduncles filiform, one-flowered.

Description, &c.—A very beautiful little plant, which in a wild state is so completely covered with clusters of flowers as quite to load its little spiny branches. In cultivation, however, it is observed in the "Botanical Register," "it loses some of its stiff spiny habit, and has not hitherto yielded flowers in clusters, but they are larger than in a wild state." It should be grown in sandy loam, mixed with a little rough peat; and we are told in the "Botanical Register" that to flower it well, "it seems necessary to place it out of doors during summer, in some exposed situation where it can remain till the end of September. By that time the flower buds will be formed, and they expand in a short time after the plant is taken in doors." The species is a native of Peru, whence it was first introduced about sixty years ago, but it was soon lost, and was not again seen in British gardens till 1845, when it was sent home by Mr. Hartweg.

GENUS II.

ANTHOCERCIS *Labill.* THE ANTHOCERCIS.

Lin. Syst. DIDYNAMIA ANGIOSPERMIA.

Generic Character.—Calyx five-cleft. Corolla campanulate; limb equal. Stamens inclosed. Fruit capsular, having the margins of the valves bent in and inserted in the parallel placentas. Seeds reticulated. (*G. Don.*)

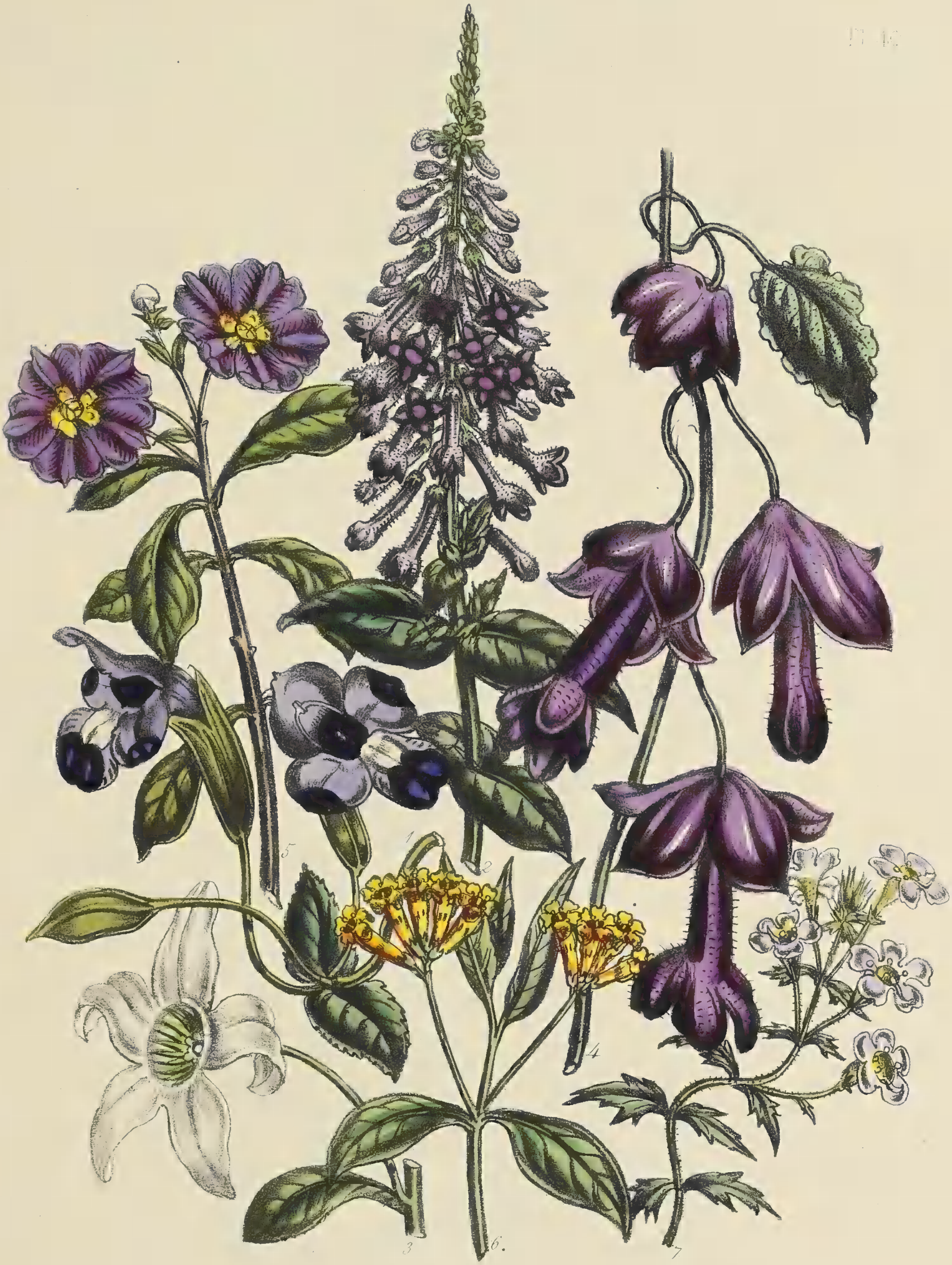
Description, &c.—This is a very small genus of Australian plants, which have generally white fragrant flowers. The name of *Anthocercis* is from two Greek words, signifying a flower and a ray, in allusion to the radiated corolla of the plants belonging to the genus.

1.—ANTHOCERCIS VISCOSA *R. Br.* THE CLAMMY ANTHOCERCIS.

Engravings.—Bot. Mag., t. 2961; Bot. Reg., t. 1624; The Botanist, t. 59; and our *fig.* 3, in Pl. 40.

Specific Character.—Leaves obovate, glandulously punctate, rough at the margin. Young branches finely pubescent. Capsule ovate, equal in length to the calyx.

Description, &c.—This plant is a native of the southern coast of New Holland, whence it was introduced in 1822. It is propagated by cuttings, and should be grown in a soil composed of peat, loam, and sand; but, as is observed in the "Botanical Register," "being of a soft nature, never forming any hard wood, or well-ripened shoots, it is peculiarly liable to injury from over-watering, or from the earth in which it is planted becoming saturated; if this happens, it immediately sickens, its leaves losing their dark green colour, and becoming of a pale yellow



1. Torenia asiatica. 2. Buddlea Lindleyana. 3. Anthocercis viscosa. 4. Rhodochiton volubile.
5. Solanum lycioides 6. Cestrum aurantiacum. 7. Chanostoma polyanthum.

hue." The remedy for this is, of course, to have the pot thoroughly well-drained by filling the bottom up to nearly one quarter of its depth with broken potsherds, and taking care not to let the pot stand either in a saucer or on the ground. There are two or three other species, one of which (*A. albicans*) has fragrant white flowers, and another (*A. littorea*) has yellow flowers.

GENUS III.

CESTRUM *Lin.* THE CESTRUM.

Lin. Syst. PENTANDRIA MONOGYNIA.

Generic Character.—Limb of the corolla conduplicate in æstivation, plicate. Stamens inclosed. Berry one-celled, few-seeded. Placentas central, free.

Description, &c.—Most of the species of this genus are not ornamental, but one which has lately been introduced is very much so. One peculiarity in this genus is, that though the flowers are usually sweet-scented, the leaves have a peculiarly disagreeable smell when bruised. The name of *Cestrum* is from the Greek word *Kestron*, which signifies betony; but there does not appear any reason why it should be applied to this plant.

1.—CESTRUM AURANTIACUM *Lindl.* THE ORANGE-FLOWERED CESTRUM.

Engravings.—Bot. Reg., for 1845, t. 22; Paxton's Mag. of Bot., vol. xiv., p. 77; and our *fig.* 6, in Pl. 40.

Specific Character.—Glabrous. Leaves petiolate, oval-acute, undulated. Flowers sessile, spicate. Bracteas deciduous. Calyx five-ribbed, five-toothed. Corolla glabrous, funnel-shaped, with a reflexed limb. Filaments pubescent at the base. Berries pear-shaped.

Description, &c.—This species is very ornamental, having large dark-green shining leaves, bright orange flowers, and abundance of snow-white pear-shaped berries, which remain on during winter after the leaves have fallen. The flowers have the pleasant perfume of orange-peel, but the berries are said to be poisonous. The plants are said to flower best when their pots are set out in the open air for a few weeks in early summer. They should be taken into the greenhouse as soon as the flower-buds are formed. The flowers generally begin to expand in August, and they continue till the latter end of October or November. The species is a native of Guatemala, and it was introduced in 1844.

CHAPTER XLVII.

SCROPHULARINÆ *R. Brown.*

Essential Character.—Calyx four or five-parted, permanent. Corolla monopetalous, hypogynous, deciduous, irregular, bilabiate, personate or ringent, imbricate in æstivation. Stamens usually four, didynamous, sometimes only two, and sometimes with a rudiment of a fifth. Ovarium two-celled. Style one. Stigma two-lobed or undivided. Fruit capsular, rarely baccate, two-celled, two or four-valved. Seeds small. Albumen copious. (*G. Don.*)

Description, &c.—There are few orders that contain more ornamental plants than this, and among them are some of our most beautiful climbers.

GENUS I.

LOPHOSPERMUM *D. Don.* THE LOPHOSPERMUM.

Lin. Syst. DIDYNAMIA ANGIOSPERMIA.

Generic Character.—Corolla bilabiate; tube wide, gibbous at the base. Capsule dehiscing irregularly under the apex. (*G. Don.*)

Description, &c.—Very beautiful climbing plants with highly ornamental flowers. The name of *Lophospermum* signifies a crested seed.

1.—LOPHOSPERMUM ATROSANGUINEUM *G. Don.* THE DARK-PURPLE LOPHOSPERMUM.

Engravings.—Bot. Mag., t. 3367; Bot. Reg., t. 1755; Sweet's Brit. Flow. Gard., 2nd series, t. 250; Paxton's Mag. of Bot., vol. ii., p. 27; and our *fig.* 4, in Pl. 40, under the name of *Rhodochiton volubile.*

Synonymes.—L. Rhodochiton *D. Don.*; Rhodochiton volubile *Zucc.*

Specific Character.—Leaves cordate, acuminate, coarsely and dentatedly serrated. Calyx partly five-cleft, spreading. Corolla tubular. Filaments simple. (*G. Don.*)

Description, &c.—This very beautiful plant, which is generally known under the name of *Rhodochiton volubile,* is well deserving of cultivation in shady places, as it thrives best when it is not exposed to the full glare of the sun. It is a native of Mexico, whence it was introduced in 1832.

OTHER SPECIES OF LOPHOSPERMUM.

L. SCANDENS *Hook.*

This is one of the most beautiful plants of the genus, and as it ripens seed freely, new varieties of it are continually being raised. It is extremely valuable as a climbing plant, and may be planted in the open air in dry warm situations, where it will grow freely and continue expanding its beautiful flowers from June till October. It is a native of Mexico, whence it was introduced in 1830. *L. Hendersonii* and *L. spectabile* are varieties of this species, which is also known in some places under the name of *L. erubescens.*

GENUS II.

MAURANDYA *Ortega.* THE MAURANDYA.

Lin. Syst. DIDYNAMIA ANGIOSPERMIA.

Generic Character.—Corolla personate, gibbous at the base. Capsule dehiscing by ten teeth at the apex. (*G. Don.*)

Description, &c.—This genus is named in honour of Dr. Maurandy, a botanical professor at Carthagena. All the species are climbing shrubs, and one of them (*M. Barclayana*) is one of the most ornamental climbing plants in British gardens. It is best raised from seeds on a hotbed, and planted out in the open ground in May, where it will continue flowering and ripening abundance of seeds all the summer, though it will be killed by the first frost in autumn. It was introduced in 1825. There is a variety of this species with delicate white flowers which is extremely beautiful; and there are two other species, viz. *M. semperflorens,* with pinkish flowers somewhat like those of the common Lophospermum, and *M. antirrhiniflora,* which has dark purple flowers of nearly the same colour as those of *M. Barclayana,* but very inferior in beauty.

GENUS III.

TORENIA *Lin.* THE TORENIA.

Lin. Syst. DIDYNAMIA ANGIOSPERMIA.

Generic Character.—Calyx plicate, obliquely five-toothed. Stamens four, with arched elongated filaments and anthers approximating or cohering by pairs, the two lower filaments appendiculate or gibbous at the base. (*G. Don.*)

Description, &c.—A genus of pretty perennial plants which are generally considered inhabitants of the stove, as they are all natives of Java and other parts of the East Indies. It has been found, however, that one species at least will flower magnificently during the summer months in the open air, and that it will live in a greenhouse all the year, only requiring a little extra heat when it is about to form its flower-buds in spring. The genus is named after Olof Toreen, a Swedish clergyman, a friend of Linnæus, who discovered *T. asiatica* in China and first brought it to Europe.

1.—TORENIA ASIATICA *Lin.* THE ASIATIC TORENIA.

Synonymes.—T. cordifolia *Benth.*; T. diffusa *D. Don*; T. peduncularis *Wall.*; T. vagans *Roxb.*; T. alba *Hamilton*; T. hirsuta *Willd.*; Gratiola alata *Car.*; Bonnaya alata *Spreng.*; Henckelia alata *Link.*

Engravings.—Bot. Mag., t. 4249; and our *fig.* 1, in Pl. 40.

Specific Character.—Leaves ovate Peduncles axillary, subfasciculate. Calyx oblong and attenuated at the base. Corolla twice the length of the calyx.

Description, &c.—It is hardly possible for any description to do justice to the beauty of the flowers of this plant, as nothing can exceed the richness of the dark purple blotches. The stems are quadrangular, and the foliage is somewhat coarse, but the beauty of the flowers makes the plant highly deserving of cultivation. It was at first supposed that it would not live out of a hothouse, but it is now found to flower best in the open air or in a greenhouse, as both the leaves and flowers assume a much paler hue when grown in a stove. The species is only an annual, or at least it is generally considered so, but it may be propagated by cuttings, which root readily, and in this manner may be preserved throughout the winter. When treated as an annual, the seed should be raised on a hotbed, and the young plants either planted out or placed in a greenhouse about May.

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OTHER SPECIES OF TORENIA.

T. SCABRA *R. Br.*

This species is a native of New Holland, whence it was introduced in 1830. It has very handsome flowers, though they are inferior in beauty to those of *T. asiatica.*

T. CONCOLOR *Lindl.*

This species is closely allied to *T. asiatica*, but it differs in the flowers being smaller and in their being destitute of the blotches of rich dark purple which make the flowers of *T. asiatica* so very ornamental. It is a native of China, whence it was introduced by Mr. Fortune in 1844. All the species of Torenia require a moist atmosphere, and abundance of water during the summer months.

GENUS IV.

MIMULUS *Lin.* THE MONKEY-FLOWER.

Lin. Syst. DIDYNAMIA ANGIOSPERMIA.

Generic Character.—Calyx five-toothed. Corolla personate. Capsule two-valved, with flattish margins. (*G. Don.*)

Description, &c.—The species belonging to this genus are all hardy or half hardy herbaceous plants, growing with coarse foliage, but very ornamental flowers. Almost all the species hybridise freely, and as some of them are yellow and some red, many very beautiful flowers are produced by the mingling of these colours. Some of the most ornamental of these have been raised in the Botanic Garden at Edinburgh.
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GENUS V.

VERONICA *Tourn.* THE SPEEDWELL.

Lin. Syst. DIANDRIA MONOGYNIA.

Generic Character.—Calyx four or five-parted. Corolla rotate, unequal. (*G. Don.*)

Description, &c.—The hardy plants belonging to this genus, under their English name of Speedwell, are well known in every part of Great Britain, but the greenhouse species are by no means common. Some of these are remarkably handsome, particularly *V. speciosa*, which is a native of New Zealand, whence it was introduced in 1841. *V. labiata* is also a very pretty plant. It has fragrant white flowers, and it is a native of Australia, whence it was introduced in 1820. *V. Lindleyana* is a beautiful species with long spikes of white flowers, which, contrary to the general habit of the genus, are drooping instead of being erect, and which are produced in such profusion that twelve spikes have been counted on one short branch. This species is a native of New Zealand, whence it was introduced in 1843. Dr. Lindley supposes it to be the same as *V. salicifolia*, which was introduced and lost several years since, but this appears by no means certain.

GENUS VI

CHÆNOSTOMA *Benth.* THE CHÆNOSTOMA.

Lin. Syst. DIDYNAMIA ANGIOSPERMIA.

Generic Character.—Calyx five-cleft. Anthers all alike exserted. Bracteas free from the pedicels. Corolla campanulate or funnel-shaped. (*G. Don.*)

Description, &c.—Herbs and small shrubs, natives of South Africa. The species in general are not remarkable for their beauty. The name of *Chænostoma* is derived from two Greek words, signifying a gaping mouth, in reference to the wide throat of the corolla.

1.—CHÆNOSTOMA POLYANTHUM *Benth.* THE MANY-FLOWERED CHÆNOSTOMA.

Engravings.—Bot. Reg. for 1847, t. 32 ; Paxton's Mag. of Bot., vol. xiii., p. 31 ; and our *fig.* 7, in Pl. 40.

Specific Character.—Much branched at the base. Branches downy at the top, panicled. Leaves ovate, toothed, cuneated at the base ; upper ones oblong, glabrous or canescent beneath. Racemes loose. Calyx hispid. Corolla funnel-shaped ; tube scarcely exceeding the calyx. (*G. Don.*)

Description, &c.—This is a dwarf bushy little plant, which produces an immense quantity of flowers nearly all the year. It is a native of South Africa, whence it was introduced in 1845.

GENUS VII.

BUDDLEA *Houston.* THE BUDDLEA.

Lin. Syst. TETRANDRIA MONOGYNIA.

Generic Character.—Calyx campanulate, five-toothed. Corolla tubular ; limb four or five-cleft, equal, spreading. Stamens four or five, nearly equal, inclosed. Anthers composed of two parallel distinct lobes. Stigma clavate, two-lobed. Capsule crustaceous.

Description, &c.—The shrubs included in this genus have usually quadrangular branches, and are half hardy plants in Great Britain. The genus is generally known by *B. globosa*, which being very nearly hardy is frequently found growing in the open air in sheltered situations in British gardens, but this gives a false idea of the other species, as its flowers are collected in globular heads, while those of most of the other species are in spikes or panicles. The name of *Buddlea* was given in honour of Adam Buddle, a friend of Ray.

1.—BUDDLEA LINDLEYANA *Fortune.* DR. LINDLEY'S BUDDLEA.

Engravings.—Bot. Reg. for 1846, t. 4; Paxton's Mag. of Bot., vol. xiv., p. 5; and our *fig.* 2, in Pl. 40.

Specific Character.—Glabrous, fruticose. Branches quadrangular. Leaves ovate, acuminate, on very short petioles, sometimes subserrate. Flowers tomentose, in verticillate spikes. Teeth of the calyx very short, triangular. Tube of the corolla elongated, somewhat ventricose above the middle; segments obtuse.

Description, &c.—This is a very ornamental shrub, which is particularly valuable as it flowers very late in the autumn, and retains its flowers during a portion of the winter. When planted in the free ground of a conservatory, it soon attains a large size and flowers profusely, seven spikes of flowers having been known to be produced on a branch not above eighteen inches long. Very poor gravelly soil is said to suit it best, as if it is grown in rich soil it is apt to produce leaves instead of flowers.

GENUS VIII.

CALCEOLARIA *Feuill.* THE CALCEOLARIA.

Lin. Syst. DIANDRIA MONOGYNIA.

Generic Character.—Lower lip of the corolla incurved, calceolate; upper lip small. Stamens two. (*G. Don.*)

Description, &c.—The species contained in this genus are generally either suffruticose or herbaceous plants. The name of Calceolaria signifies a little slipper, in allusion to the form of the corolla. The number of species in the genus is very great, and if we add to them the immense mass of hybrids and varieties that are continually being raised, it will be evident that in a work like the present it will be impossible to do more than mention a few of the most distinct of the original species, from which the principal hybrids have been raised.

1.—CALCEOLARIA CRENATIFLORA *Cav.* THE CRENATE-FLOWERED CALCEOLARIA.

Synonymes.—C. anomala *Pers.*; C. pendula *Sweet*; C. suberecta *Hort.*

Engravings.—Bot. Mag., t. 3255; Bot. Reg., t. 1609; Sweet's Brit. Flow. Gard., 2nd series, t. 155; and our *fig.* 1, in Pl. 41.

Specific Character.—Leaves obovate-oblong, unequally serrated, rather tomentose. Lower lip of the corolla crenated. (*G. Don.*)

Description, &c.—This is one of the handsomest species of the Chilian Calceolarias, and it was introduced about 1832. It is herbaceous, of remarkably vigorous growth and handsome foliage, and it has very showy flowers. Perhaps none of the Calceolarias have been parents of a more numerous progeny than this one, as almost all the handsome spotted kinds have been raised from it, as also many of those with a dark blotch in the centre. It should have abundance of water while growing, as from the large size of its leaves evaporation is very great.

2.—CALCEOLARIA ARACHNOIDEA *Graham.* THE COBWEB CALCEOLARIA.

Synonyme.—C. tinctoria *Gillies.*

Engravings.—Bot. Mag., t. 2874; Bot. Reg., t. 1454; Lodd. Bot. Cab., t. 1557; and our *fig.* 2, in Pl. 41.

Specific Character.—Stem herbaceous. Branches spreading. Leaves ligulate, oblong, subdentate, opposite, woolly. Peduncles terminal, twin, elongated, dichotomous. Calyx and pedicel covered with cobweb-like tomentum.

Description, &c.—This is another vigorous growing species, which has been also very frequently used for producing hybrids, *C. fulgens* and some other magnificent looking plants having been produced between this kind and *C. crenatiflora.* The species is herbaceous, and a native of the province of Mendoza in Chili, whence it was introduced in 1828. It is the hardiest of all the species of *Calceolaria.*

OTHER SPECIES OF CALCEOLARIA

C. CORYMBOSA *Ruiz et Pav.*

This very handsome plant is a native of Chili. It has also been the parent of numerous hybrids, but generally speaking they are not either so vigorous or so splendid in their colours as those raised from *C. crenatiflora*

C. PURPUREA *Graham.*

This has also been the parent of many hybrids, but generally speaking it is as inferior for this purpose to *C. arachnoidea* as *C. corymbosa* is to *C. crenatiflora.* *C. purpurea* is a native of Chili, whence it was introduced in 1827.

CHAPTER XLVIII.

GESNERACEÆ *Richard.*

Essential Character.—Calyx five-cleft. Corolla oblique; tube drawn out behind and in front; limb five-cleft, sub-bilabiate. Stamens four, didynamous, with usually the rudiment of a fifth, alternating with the divisions of the corolla, the upper one abortive. Anthers distinct, cohering by pairs or altogether. Ovarium one-celled. Placentas two parietal, bilamellate. Fruit capsular or baccate, silique-formed or round. Seeds numerous, hanging by long funicles or erect. (*G. Don.*)

Description, &c.—The plants belonging to this order are nearly all very ornamental. The roots are usually tuberous. Most of the species require a hothouse in Great Britain, but some few are greenhouse plants.

GENUS I.

ACHIMENES *P. Browne.* THE ACHIMENES.

Lin. Syst. DIDYNAMIA ANGIOSPERMIA.

Generic Character.—Tube of the calyx adnate to the ovarium; limb five-parted; lobes lanceolate. Corolla tubularly funnel-shaped, somewhat gibbous at the base; limb five-cleft; lobes nearly equal and roundish. Stamens four, didynamous, with the rudiments of a fifth. Anthers not cohering. Ovarium girded by a ring. Capsule dry, one-celled. Placentas two, parietal.

Description, &c.—The first species of this genus that was discovered was called by Dr. Patrick Browne *Achimenes*, but it afterwards received four or five other names, by one or two of which it was generally known, till now, after the lapse of seventy years, it has been restored to its original appellation. For many years only this one species was known in Great Britain, but in 1841 several others were sent to England by Mr. Hartweg, and since that period still more have been introduced. The name of *Achimenes* signifies unable to bear tempestuous weather, but the application of it to this plant does not appear very clear.

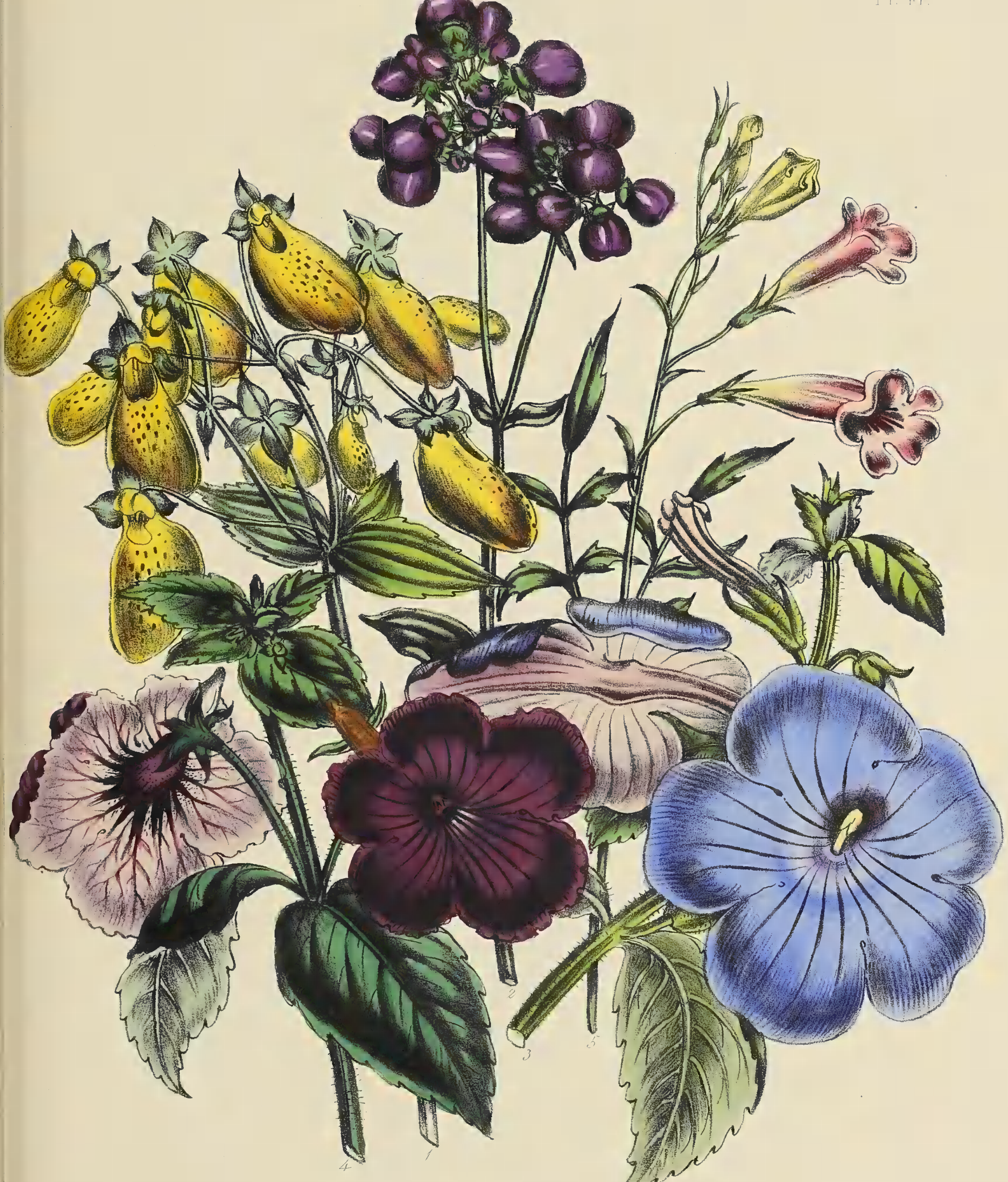
1.—ACHIMENES COCCINEA *Pers.* THE SCARLET ACHIMENES.

Synonymes.—A. minor *P. Browne*; Trevirania pulchella *Willd.*; Cyrilla pulchella *L'Herit.*; Buchnera coccinea *Scop.*; Columnea erecta *Lam.*; Gesnera pulchella *Swartz.*

Engraving.—Bot. Mag., t. 374.

Specific Character.—Plant tomentosely hairy. Leaves three in a whorl, ovate, acuminated at both ends, serrated, with minute leaves in the axils. Peduncles solitary, axillary.

Description, &c.—This species, under the names of *Trevirania* and *Cyrilla*, is well known in nurseries. It used



1. Calceolaria crenatiflora 2 Calceolaria arachnoidea. 3 Achimenes longiflora.
4 Achimenes patens. 5 Amphicome arguta.

formerly to be considered as a hothouse plant, but though it is a native of Jamaica, it is only found growing in mountainous places, and therefore does not require so much heat as might naturally be expected. It is now found that the best method of managing it is the following, which is quoted from the "Botanical Register." "The stems die off after flowering, and the roots must then be kept perfectly dry throughout the winter and spring before the plant begins to grow. When it shows signs of growth, it should be repotted and divided if necessary, and then put in a situation near the light and freely watered. It is best to start it in a gentle heat, such as in a warm greenhouse, or cucumber-frame, to enable it to form its stems and flower-buds, and then it may be brought out to flower in the conservatory or the sitting room. It will grow in any rich free soil, and may be propagated by cuttings, or by the numerous imbricated buds which it forms both underground and on the stem."

2.—ACHIMENES LONGIFLORA *Benth.* THE LONG-FLOWERED ACHIMENES.

Engravings.—Bot. Mag., t. 3980; Bot. Reg. for 1842, t. 19; Paxton's Mag. of Bot., vol. ix., p. 151; and our *fig.* 3, in Pl. 41.

Specific Character.—Leaves in whorls of three or four, ovate-oblong, grossly serrated. Stem hairy. Pedicels one-flowered, shorter than the calyx. Segments of the calyx lanceolate, erect, four times shorter than the tube of the corolla. Limb of the corolla broad, spreading.

Description, &c.—This species is a native of Guatemala, whence its tuberous roots were sent home by Mr. Hartweg in 1841. It requires the same kind of culture as *A. coccinea*, but it is hardier, and after the flowering season has passed and the stems have died down, the roots require no other care than keeping them perfectly dry and free from frost during winter. The plant begins to flower in August, and it continues flowering for three or four months.

3.—ACHIMENES PATENS *Benth.* THE SPREADING ACHIMENES.

Engravings.—Paxton's Mag. of Bot., vol. xiii., p. 197; Journal of the Horticultural Society, vol. i., t. 7; and our *fig.* 4, in Pl. 41.

Specific Character.—Leaves opposite, somewhat serrated. Pedicels longer than the calyx, which is pubescent. Tube of the corolla saccate, longer than the limb; spur conical.

Description, &c.—This very beautiful species was found by Mr. Hartweg in Mexico in December 1845. He had seen it in flower previously and marked the spot where it grew, but as in the meantime the stems had withered, and there was not a leaf to be seen, he had great difficulty in finding the roots. It requires the same treatment as *A. coccinea*, but it flowers somewhat earlier.

OTHER SPECIES OF ACHIMENES.

A. ROSEA *Lindl.*

This beautiful little plant was introduced at the same time as *A. longiflora*, but it presents a very striking contrast to that species from the very small size and brilliant scarlet of its flowers. It requires the same treatment as the other species.

A. PEDUNCULATA *Benth.*

This species has splendid scarlet blossoms, streaked in the centre of the mouth with dark brown. It is a native of Guatemala, whence it was introduced by Mr. Hartweg in 1843. It begins to flower in August, and continues till November, but the stems do not die down like those of the other species, and it requires a moist warm atmosphere during winter. Curious little bulb-like tubers are formed on the upper part of the peduncles, along with minute leaves, and the tubers being red, they produce a very singular appearance.

A. PICTA *Benth.*

This is certainly one of the most beautiful species of the genus, as the flowers, which are of a brilliant scarlet in the upper part, are yellow below and beautifully streaked and spotted. The leaves are also very beautifully marked with a paler green upon a rich dark green. The species is a native of Mexico, whence it was introduced in 1846. It is most nearly allied to *A. pedunculata*, and, like that species, it seems very nearly allied to the *Gesneras*. It likewise requires rather more warmth.

A. SKINNERI *Lindl.*

This is a handsome species, forming a link between the tall and the dwarf kinds, and its flowers being exactly intermediate between *A. grandiflora* and *A. hirsuta*. It was introduced from Guatemala in 1847.

A. PYROPÆA *Lindl.*

This has small ruby-coloured flowers, which are produced in great abundance, and which are very ornamental.

There are many other species, some of which, such as *A. grandiflora*, *A. hirsuta*, and *A. multiflora*, are very beautiful, but they require to be kept in a stove.

GENUS II.

AMPHICOME *Royle.* THE AMPHICOME.

Lin. Syst. DIDYNAMIA ANGIOSPERMIA.

Generic Character.—Calyx tubular, five-toothed. Corolla tubular, ventricose near the base; limb five-lobed, ciliated. Stamens four, didynamous, with the rudiment of a fifth. Stigma bilamellate. Capsule silique-formed. Seeds winged at both ends, and bearded. (*G. Don.*)

Description, &c.—Only one species of this genus has as yet been introduced. The name of *Amphicome* is from two Greek words, signifying hair on both sides, in allusion to the seeds being bearded at both ends.

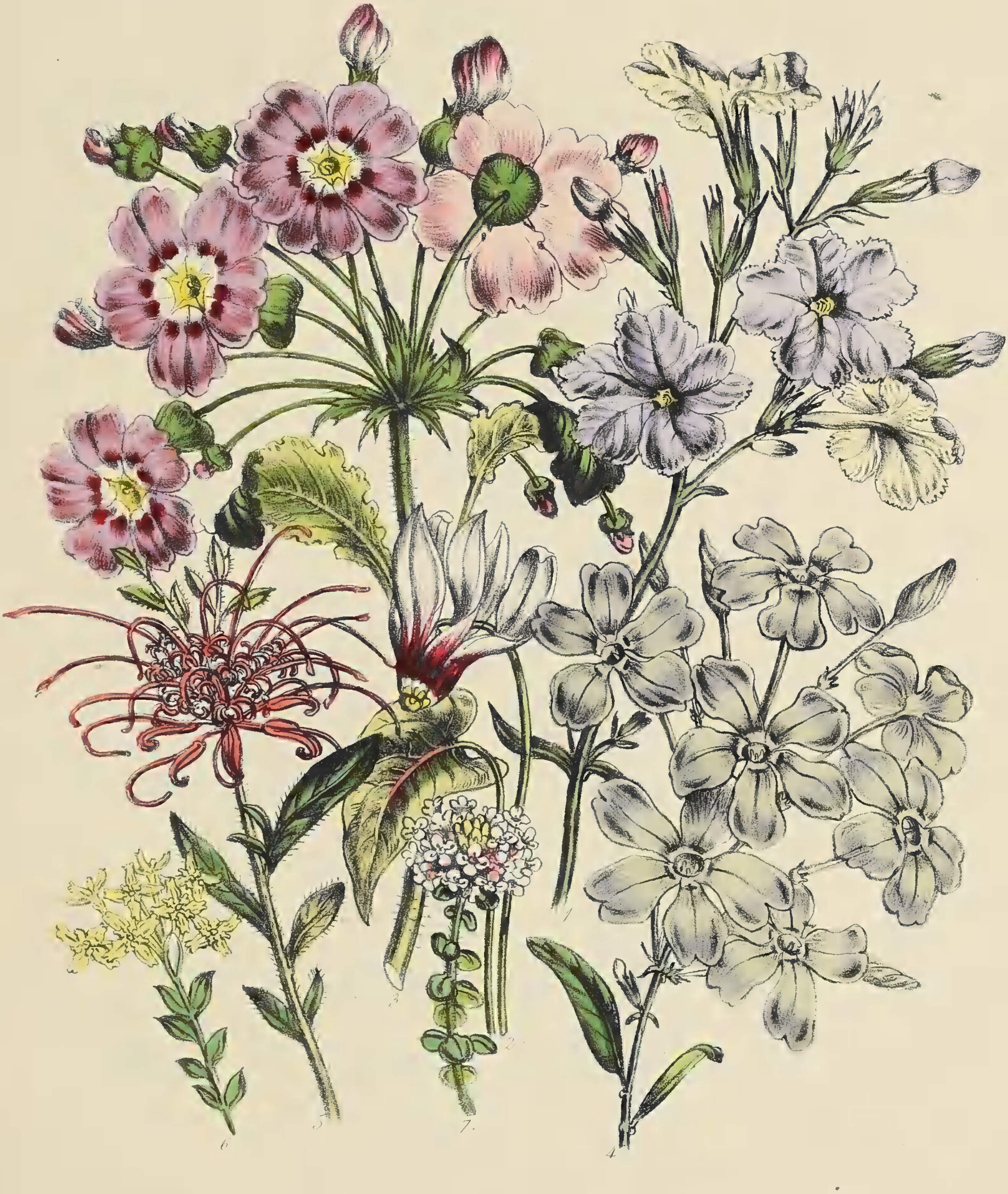
1.—AMPHICOME ARGUTA *Royle.* THE FINELY-CUT AMPHICOME.

Synonyme.—Incarvillea arguta *R. Br.*

Engravings.—Bot. Reg. for 1838, t. 19; Paxton's Mag. of Bot., vol. vi., p. 79; and our *fig.* 5, in Pl. 41.

Specific Character.—Leaflets opposite, on short petioles, three or four pairs, lanceolate, acuminate, unequal at the base, dentately serrated. (*G. Don.*)

Description, &c.—This is a very elegant little shrub, a native of the Himalayas, where it was found growing at an elevation of from six to eight thousand feet. Seeds of it were sent home by Professor Royle in 1836, and from these one single plant was raised, which blossomed in the Horticultural Society's Garden in August 1837. The flowers were succeeded by long elegant seed pods, in which abundance of seed was ripened, and the plant has now become comparatively common. The botanical construction of this plant is very curious, particularly in the anthers, which appear to be clinging round the style, and which have a horn on each lobe, and another on the connective or part between the lobes. The seed pods are remarkably long and slender. The plant is a perennial, and does not flower till the second year. The flowers appear from June till September. The plant may be called half hardy, as it only requires to be protected from severe frosts; but it is very impatient of wet even in summer, and requires to be kept particularly dry during winter.



1 *Ruellia ciliatiflora.* 2 *Cyclamen persicum* 3 *Primula sinensis* 4 *Plumbago capensis.* –
5 *Grevillea punicea* 6 *Gnidia oppositifolia* 7 *Pimelea incana*

CHAPTER XLIX.

ACANTHACEÆ *R. Brown.*

Essential Character.—Calyx usually five-parted and very much imbricated, persistent. Corolla monopetalous, hypogynous, bearing the stamens, generally irregular; the limb ringent or two-lipped, but sometimes one-lipped or nearly equal, deciduous. Stamens mostly two, both bearing anthers, sometimes four, didynamous, the shorter ones being sometimes sterile. Anthers one or two-celled, generally opening lengthwise. Ovary seated in a disk, two-celled; the cells either two or many-seeded. Placentæ parietal, though adhering in the axis. Style one. Stigma two-lobed, rarely undivided. Capsule two-celled, bursting elastically with two valves. Seeds roundish, hanging by the ascending processes of the placenta. Testa loose. Albumen none. Cotyledons large, roundish.

Description, &c.—Most of the plants belonging to this order are natives of the tropics, and most of them have very ornamental flowers. Very few can be said to belong to the greenhouse, but those which do are extremely ornamental. Some of the species that are properly stove plants may be grown in the open air by treating them as annuals, and raising them from seed every year on a hotbed. Thus, though most of the plants included in the order are natives of hot climates, singularly enough the one from which the order takes its name is perfectly hardy in Great Britain.

GENUS I.

RUELLIA *Lin.* THE RUELLIA.

Lin. Syst. DIDYNAMIA ANGIOSPERMIA.

Generic Character.—Calyx five-cleft, equal. Corolla funnel-shaped; limb five-cleft, nearly equal, spreading. Anthers two-celled. Capsule many-seeded, splitting across the cells into two valves, each bearing a portion of the dissepiment across the centre.

Description, &c.—Nearly all the species of this genus are stove plants, but two of them may be kept in a greenhouse provided they have a little heat by plunging the pots in a hot-bed, or giving them bottom-heat in some other way, just when the plants are forming their flower buds. The name of *Ruellia* was given to this genus in honour of Dr. Ruelle, a French botanist.

1.—RUELLIA CILIATIFLORA *Hook.* THE FRINGE-FLOWERED RUELLIA.

Engravings.—Bot. Mag., t. 3718; and our *fig.* 1, in Pl. 42.

Specific Character.—Herbaceous. Leaves petiolate, ovate, unequally serrated, covered with a hairy pubescence. Panicles terminal, leafless. Calyx in unequal lobes; segments subulate. Tube of the corolla angularly curved; limb oblique, lobes undulated, sub-rotund, dentately ciliated.

Description, &c.—This very beautiful plant was brought by Mr. Tweedie from Buenos Ayres in 1839, and it produces its beautifully fringed and delicate lilac flowers in September. It is truly herbaceous, growing about a foot and a half high, and it has very handsome foliage.

OTHER SPECIES OF RUELLIA

R. AUSTRALIS *Cav.*

This species is a native of New Holland, where it has been found in the neighbourhood of Port Jackson. It seems, however, to have a very widely extended botanical range, as it has also been found in several parts of the East Indies. It has small dark-blue flowers. It was introduced in 1820.

CHAPTER L.

PRIMULACEÆ *Vent.*

Essential Character.—Calyx generally five-cleft, inferior or half superior, regular, persistent. Corolla monopetalous, hypogynous, regular; the limb generally five-cleft. Stamens inserted upon the corolla, equal in number to its segments and opposite to them. Ovary one-celled. Style one. Stigma capitate. Capsule opening with valves. Placenta central, distinct. Seeds numerous, peltate. Embryo included within fleshy albumen, and lying across the hilum. (*Lindley.*)

Description, &c.—The common Primrose gives its name to this order; but many of the plants included in it bear very little general resemblance in their flowers, and can only be recognised by their botanical construction, and particularly by the curious form and arrangement of the seed-vessel. One of the plants included in the order (the Common Pimpernel), a British weed, generally ripens abundance of seed every year, and if its capsule be examined, it will be found to consist of a round ball-like case, the upper part of which falls off when it is ripe and shows the seeds packed so curiously and closely together as not to leave the least space between them.

GENUS I.

CYCLAMEN *Lin.* THE CYCLAMEN.

Lin. Syst. PENTANDRIA MONOGYNIA.

Generic Character.—Calyx campanulate, somewhat five-cleft, persistent; segments ovate. Tube of the corolla sub-globose, twice as long as the calyx; limb five-parted; segments very much reflexed. Filaments very short, in the tube of the corolla. Anthers connivent. Style longer than the stamens. Stigma acute. Capsule globose, opening in the middle. Seeds numerous, subovate, angular.

Description, &c.—The plants belonging to the genus *Cyclamen* are all very ornamental, and at the same time singular from the bending back of the limb of the corolla. The name of *Cyclamen* is from a Greek word signifying a circle, in allusion to the roundness of the leaves. Most of the species are hardy, but the Persian Cyclamen requires a greenhouse in this country.

1.—CYCLAMEN PERSICUM *Mill.* THE PERSIAN CYCLAMEN.

Variety.—C. p. *var.* laciniatum *Lindl.*

Engravings.—Bot. Mag., t. 44; Lodd. Bot. Cab., t. 751; and our *fig* 2, in Pl. 42.

Specific Character.—Leaves oblong-ovate, cordate, sometimes reniform and cordate, crenated. Segments of the corolla oblong.

Description, &c.—This plant is not only extremely beautiful, but delightful for its fragrance. It is a native of the Isle of Cyprus, but it is also found in Persia and Asia Minor. It was introduced in 1731. It is decidedly a greenhouse plant, and should be grown in pots in vegetable mould and loam, taking care that it has plenty of air in summer, and that it is kept as dry as possible in winter, as if the plant is kept moist, the tuberous root is very apt to decay. There are numerous varieties, one of which is entirely without fragrance, and another has the flowers purely white; but the most remarkable is the one figured in the "Botanical Register," the flower of which is of gigantic size, having the segments very much cut and not at all reflexed.

GENUS II.

PRIMULA *Lin.* THE PRIMROSE.

Lin. Syst. PENTANDRIA MONOGYNIA.

Generic Character.—Calyx five-toothed. Corolla salver-shaped; tube cylindrical. Stamens five; filaments very short; anthers oblong-oval, included within the tube. Capsules one-celled; apex ten-toothed.

Description, &c.—The species of the genus Primula are very numerous, and most of them are very ornamental. By far the greater part, however, are hardy plants, for even when they are natives of hot countries, they generally grow on the tops of mountains where the climate is temperate. The only species which is properly an inhabitant of the greenhouse is the Chinese Primrose. The word *Primula* is derived from the Latin *primus*, in allusion to the flowers being among the first that blossom in the spring.

1.—PRIMULA SINENSIS *Hook.* THE CHINESE PRIMROSE.

Synonyme.—P. prænitens *Ker.*

Engravings.—Bot. Mag., t. 2564; Bot. Reg., t. 539; Lodd. Bot. Cab., t. 916; and our *fig.* 3, in Pl. 42.

Specific Character.—Leaves all radical, cordate-ovate, many-lobed; lobes dentate. Petioles longer than the leaves, and as well as the whole plant covered with a soft pubescence. Scapes several from the same root. Flowers umbellate; umbels frequently twice proliferous, making the flowers verticillate. Calyx conical, inflated at the base.

Description, &c.—This species was first introduced by T. C. Palmer, Esq., of Bromley, in Kent, a gentleman in whose greenhouses some of our most beautiful Camellias and other Chinese plants were blossomed for the first time in England, the plants in question having been introduced by Mr. Palmer's brother-in-law, Captain Rawes. The Chinese Primrose, it is stated in the "Botanical Magazine," was at first considered very shy in producing seed, but it was found after a little experience that this was occasioned by the pollen not becoming readily detached from the anthers, and that when the flower was blown into abundance of seeds ripened. At present, innumerable varieties have been raised, some of which are white and others of different tinges of lilac; some of all colours are double, and many of these are beautifully fringed at the edges. The plants require only the ordinary treatment of greenhouse plants; they thrive best in rich loam with a large proportion of sand, and they require to be well watered, but not over the crown, as it is apt to rot. The species is a native of China, whence it was introduced in 1820.

CHAPTER LI.

PLUMBAGINACEÆ *Lindl.*

Essential Character.—Calyx tubular, plaited, persistent. Corolla of very thin texture, monopetalous, with a narrow angular tube, or of five petals, which have a long narrow claw. Stamens definite, opposite the petals; in the monopetalous species hypogynous; in the polypetalous species arising from the petals. Ovary superior, composed of five valvate carpels, one-celled, one-seeded. Ovule pendulous from the point of an umbilical cord, arising from the bottom of the cavity. Styles five. Stigmas five. Fruit a nearly indehiscent utricle. Seed inverted, with a rather small quantity of mealy albumen.

Description, &c.—The plants belonging to this order are distinguished by the plaited calyx of the flower, and by the singular position of the solitary seed, which is suspended by a cord rising from the base of the ovary and passing over it. It is also remarkable that the ovary is only one-celled, and contains but one seed, though there are five stigmas. The most interesting genera in the order are *Plumbago* and *Statice.*

GENUS I.

PLUMBAGO *Tourn.* THE LEADWORT.

Lin. Syst. PENTANDRIA MONOGYNIA.

Generic Character.—Calyx tubular, plicate, five-toothed, persistent. Corolla monopetalous, salver-shaped; limb five-parted. Stamens hypogynous. Style filiform. Stigmas five, acute. Capsule valvate. Seeds albuminous.

Description, &c.—The species of *Plumbago* differ widely in their habits, some being hardy perennials, others stove climbers, and others greenhouse half-shrubby plants. All the species are ornamental, and they generally have flowers which are either some shade of blue or white. The name of *Plumbago* probably alludes to the popular name of Leadwort, Plumbago being the scientific name of what is commonly called black-lead. Some botanists, however, give it quite a different derivation.

1.—PLUMBAGO CAPENSIS *Thunb.* THE CAPE LEADWORT.

Engravings.—Bot. Mag., t. 2110; Bot. Reg., t. 417; Lodd. Bot. Cab., t. 295; and our *fig.* 4, in Pl. 42.

Specific Character.—Leaves petiolate, oblong, entire, glaucous beneath. Stem erect.

Description, &c.—This very handsome plant is a native of the Cape of Good Hope, whence it was introduced about 1818. It is of very easy culture, and only requires to be well drained, and to be grown in pots in which the soil contains a considerable proportion of sand. Its comparative hardiness, and the little attention it requires combined, have long rendered this one of the most popular of our greenhouse plants.

OTHER SPECIES OF PLUMBAGO.

P. LARPENTÆ *Lindl.*

This very ornamental species was discovered by Mr. Fortune growing on a wall in China. In this country it proves one of those greenhouse plants which, if they are kept from the frost during winter, may be turned into the open ground during the summer, and will there flower profusely. The species in question is said to have produced upwards of four thouuand flowers when planted in the open ground, in the summer of 1847, in Knight's Exotic Nursery, Chelsea. The flowers are much smaller than those of *P. capensis*, and their colour is a deep mazarine blue.

GENUS II.

STATICE *Lin.* THE SEA LAVENDER.

Lin. Syst. PENTANDRIA PENTAGYNIA.

Generic Character.—Flowers spiked or panicled. Calyx of a single piece, monosepalous, plaited, somewhat scarious. Petals five, slightly connate. Stamens attached to the base of the petals. Utricle one-seeded, inclosed in the calyx. (*Bentham.*)

Description, &c.—Most of the species contained in this genus bear a great resemblance to the common Sea Lavender, and hence they are not particularly ornamental. *Statice arborea*, however, and some other kinds are greenhouse plants. The name of the genus is derived from a Greek word, signifying to stop, from some of the species being powerfully astringent. *S. arborea* is a native of the Island of Teneriffe, whence it was introduced about 1829.

CHAPTER LII.

PROTEACEÆ *Juss.*

Essential Character.—Calyx four-cleft, with a valvate æstivation. Stamens four, sometimes in part sterile, opposite the segments of the calyx. Ovary consisting of a single carpel, superior. Style simple. Stigma undivided. Fruit dehiscent or indehiscent. Seed without albumen.

Description, &c.—The genus from which this order takes its name consists of plants which are more curious than beautiful; but in some of the other genera belonging to the order the plants are very ornamental. In all, however, there is a certain singularity of form which distinguishes them from every other order. Most of these plants are natives of Australia, particularly those belonging to the genera *Banksia* and *Dryandra*, which were discovered by Sir Joseph Banks and named after him and Dr. Dryander who accompanied him. The flowers of these plants, though very curious, can scarcely be called ornamental, and, in fact, the only genus containing ornamental greenhouse plants is *Grevillea.*

GENUS I.

GREVILLEA *R. Br.* THE GREVILLEA.

Lin. Syst. TETRANDRIA MONOGYNIA.

Generic Character.—Corolla irregular; petals secund, the apices concave, staminiferous. Anthers inclosed. Hypogynous gland single, dimidiate. Stigma oblique, depressed. Follicles one-celled, two-seeded; seeds having a margin or a short wing at the apex.

Description, &c.—The botanical construction of these plants is very curious, and the great length of the style with its depressed stigma is so very peculiar that no one who has once observed the flower of a *Grevillea* can ever be in any doubt respecting any other species of the genus. The name of *Grevillea* was given in honour of the Right Honourable Charles Francis Greville.

1.—GREVILLEA PUNICEA *R. Br.* THE CRIMSON GREVILLEA.

Synonymes.—Embothrium sericeum *var. Smith*; Lyssanthe speciosa *Knight et Salisb.*

Engravings.—Bot. Reg., t. 1319; Lodd. Bot. Cab., t. 1357; and our *fig.* 5, in Pl. 42.

Specific Character.—Leaves elliptic-oblong, somewhat attenuated at the base, reflexed at the margin. Racemes of flowers branched; flowers downy inside. Calyx clothed internally with a long white beard. Pistil smooth.

Description, &c.—This is a very beautiful species, nearly allied to *G. sericea*, but much more brilliant in its colours. It is a native of New Holland, whence it was introduced in 1829.

OTHER SPECIES OF GREVILLEA.

G. SERICEA *R. Brown.*

This species was introduced in 1790, and consequently was one of the first known in this country. It is a hardy greenhouse plant, flowering nearly all the year.

G. BUXIFOLIA *R. Brown.*

This is a very curious species of the genus, and is remarkable for having the appearance of a box-tree when not in flower. It was introduced at the same time as *G. sericea*, but being less ornamental in its flowers, it is now very seldom seen

There are many other species, but they bear so much general resemblance to each other that those which have been already mentioned will serve as a type of the rest.

CHAPTER LIII.

THYMELACEÆ *Lindl.*

Essential Character.—Stems shrubby, very seldom herbaceous, with tenacious bark. Leaves without stipules, alternate or opposite, entire. Flowers capitate or spiked, terminal or axillary, occasionally solitary, sometimes diœcious by abortion, often inclosed in an involucre. Calyx inferior, tubular, coloured; the limb four-cleft, seldom five-cleft, with an imbricated æstivation. Corolla 0, or sometimes scale-like petals in the orifice of the calyx. Stamens definite, inserted in the tube or its orifice, often eight, sometimes four, less frequently two; when equal in number to the segments of the calyx or fewer opposite to them; anthers two-celled, dehiscing lengthwise in the middle. Ovary composed of a single carpel, with one solitary pendulous anatropal ovule; style one; stigma undivided. Fruit hard, dry, and nut-like, or drupaceous. Albumen none, or thin and fleshy; embryo straight; cotyledons plano-convex, sometimes lobed and crumpled; radicle short, superior. (*Lindley.*)

Description, &c.—The plants included in this order have generally ornamental flowers, resembling more or less those of the common Mezereon The bark is caustic and remarkably tenacious. The inner bark is also remarkable for the tenacity of its fibres, and the capacity which it possesses of being drawn out to an almost indefinite extent. The *Lagetta* or Lace-bark of the West Indies is a remarkable example of this extraordinary tenacity. A soft kind of paper is made from the inner bark of some of the kinds of *Daphne*, and the bark of one species of *Gnidia* is manufactured into ropes in Madagascar.

GENUS I.

GNIDIA *Juss.* THE GNIDIA.

Lin. Syst. OCTANDRIA MONOGYNIA.

Generic Character.—Calyx with a long filiform tube and a four-cleft limb. Scales four to eight, alternating with the segments of the calyx. Style filiform, lateral. Stigma capitate, hispid.

Description, &c.—This genus consists of a number of neat little plants, generally natives of the Cape of Good Hope. The meaning of the word *Gnidia* is not exactly understood.

1.—GNIDIA OPPOSITIFOLIA *Lin.* THE OPPOSITE-LEAVED GNIDIA.

Synonymes.—G. lævigata *Thunb.*; Thymelæa africana *Pluk.*; Passerina lævigata *Willd.*; Nectandra lævigata *Berg.*

Engravings.—Bot. Mag., t. 1902; Bot. Reg., t. 2; Lodd. Bot. Cab., t. 16; and our *fig.* 6, in Pl. 42.

Specific Character.—Leaves decussate, ovate or oval-lanceolate, acute, glabrous. Scales stamen-like, appearing above the mouth of the calyx. Stamens eight, inclosed within the calyx.

Description, &c.—This is a curious little plant, which differs very much in different specimens; those plants which are exposed to the air and a powerful sun becoming yellowish in their flowers, while those which are grown in more shady places are cream-coloured, and sometimes pure white. The plant is a low shrub, growing from a foot to two feet high, and the leaves have a glaucous hue, which proceeds from a whitish efflorescence, appearing like shagreen when inspected through a magnifying-glass. The species is a native of the Cape of Good Hope, whence it was sent to Kew Gardens in 1783. There are many other species of *Gnidia*, but they all bear a strong resemblance to each other.

GENUS II.

PIMELEA *Banks et Solander*. THE PIMELEA.

Lin. Syst. DIANDRIA MONOGYNIA.

Generic Character.—Calyx funnel-shaped; limb four-cleft; throat destitute of scales. Stamens two, inserted in the mouth of the calyx, opposite the segments. Style lateral. Stigma capitate. Capsule a nut, rarely a berry.

Description, &c.—The plants belonging to this genus are Australian shrubs with heads of whitish flowers. The name of *Pimelea* is said to signify fat, but there does not appear any reason for the word being applied to these plants.

1.—PIMELEA INCANA *R. Brown.* THE HOARY PIMELEA.

Synonyme.—P. nivea *Knowles*.

Engravings.—Bot. Reg for 1838, t. 24; The Botanist, t. 147; Floral Cabinet, t. 9; and our *fig.* 7, in Pl. 42.

Specific Character.—Leaves ovate, sometimes orbicular, recurved at the margin, tomentosely pubescent below. Flowers collected in small heads.

Description, &c.—This is a pretty little plant, which is said to have been imported in 1824, but which is still very rare in collections. It requires the usual treatment of greenhouse plants. The species is a native of Van Diemen's Land.

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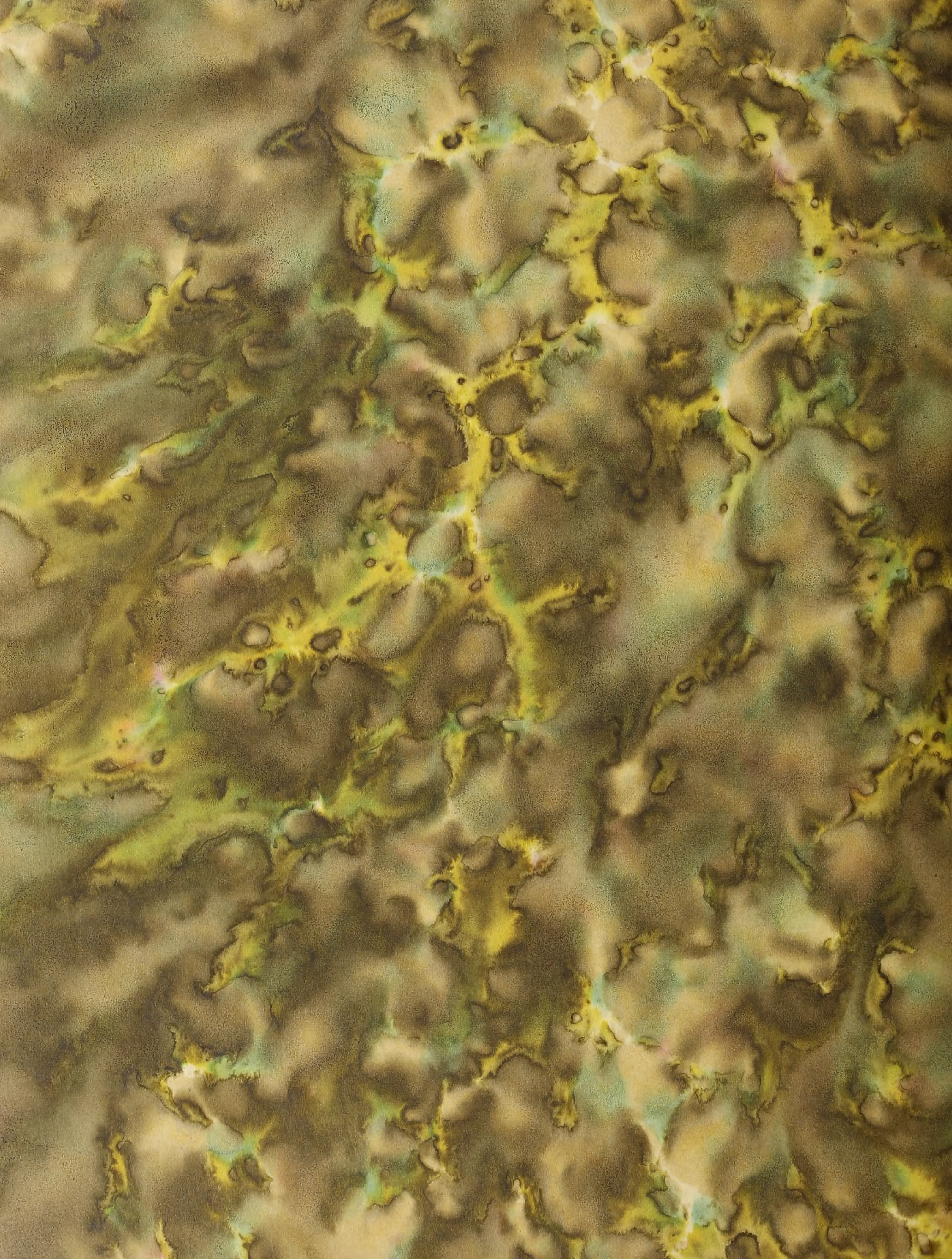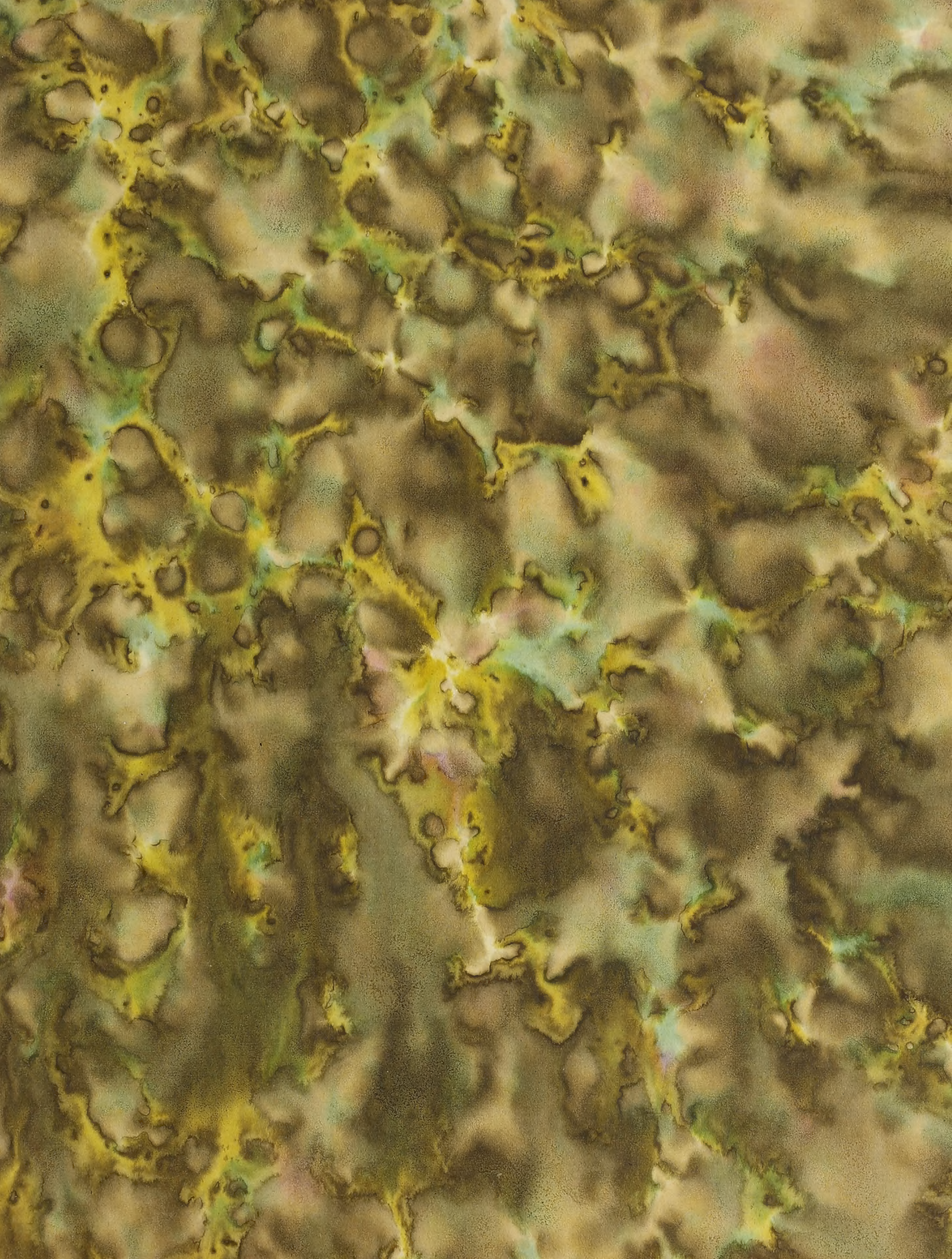6/92-L